AMERICAN ARTISAN and Hardware Record

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Founded 1880 by Daniel Stern

Thoroughly Covers the Hardware, Stove, Sheet Metal, and Warm Air Heating and Ventilating Interests

AMERICAN ARTISAN and Hardware Record

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BEST SERVICE TO PUBLIC PAYS BEST

In this world of keen competition and business envy, there exists a proneness on the part of the little fellow to assume that the big fellow wins by his very bigness—that "nothing succeeds like success" and that once having achieved the peak of prosperity the big business rolls along by its own inertia.

This pleasant theory would be harmless enough, if true. The long line of commercial wrecks which bestrew the pathway of amazing industrial progress of the United States disprove it.

For it should be remembered that while concerns considered large 40 years ago are now gigantic corporations, in doing so they have outstripped other concerns and businesses of even greater standing and more ambitious future.

Is there any difference, then, in building success for the small merchant and small manufacturer, than in sustaining the success of the concern which has "arrived" and, even of expanding it. We think not. We believe the same principles of commercial growth are fundamental regardless of the size or station of the concern.

American Artisan and Hardware Record believes that the "secret" of this progress has been enunciated by the Standard Oil Company (Indiana), as expressed in the editorial we quote here. Incidentally, Standard Oil Company (Indiana) nor any other of the Standard Oil companies are advertisers in nor do they bear any other influence on this publication. But we confess our faith in this business sermon, and its general applicability in all lines of business:

"Consumers buy petroleum products from the company which serves them best. The Standard Oil Company (Indiana) has succeeded notably because it has given notable service.

"First on the efficiency chart comes quality of product. To maintain this quality there has been organized modern laboratories where every product is chemically tested for the service it is designed to render. High quality once achieved is made a standard from which deviation is never permitted.

"Sales and distribution also are organized to produce maximum results at minimum expense. This assures the consumer a dependable supply, and it guarantees that when he buys a Standard Oil Company (Indiana) product he is paying only a fair and equitable price for which he receives full value.

"Every factor entering into the Standard Oil Company (Indiana) business, from the purchase of crude, its transportation to the company's refineries, its manufacture into a large number of useful products, its distribution through an intricate network of main and sub-storage depots, tank wagons, and service stations, is developed with a single eye to serving the public.

"Experience has proved that the most profitable business accrues to that organization which serves the public best."

Random Notes and Sketches.

By Sidney Arnold

On November 15th, my good friend E. A. Stowe, "the grand old man of Michigan," celebrated his 39th anniversary as editor and chief executive of the *Michigan Tradesman,* with an issue of eighty pages and cover.

I have known Mr. Stowe nearly twenty years, have bought advertising space from him, visited with him, argued with him, and at all times I have found him to be a man with firmly established, sound business principles, ready to battle for what he thought was right—a fine friend and hard but fair opponent.

Sometimes I admit he was wrong, but if and when you were able to convince him he was always willing to admit his error.

That is why Mr. Stowe has built up a trade paper which is unique in appearance, in contents and in the fact that it is highly successful as a profit producer. He serves his clientele well.

* * *

Thomas I. Peacock, President of the Salesmen's Auxiliary of the Michigan Sheet Metal and Roofing Contractors' Association, was a visitor at my office the other day.

Tom has a great circle of acquaintances among the furnace installers in the land of the Wolverines.

* * *

I enjoyed a pleasant visit with Dr. John P. Wagner, President of the Success Heater and Manufacturing Company, and his new sales-manager, L. G. Colburn.

From what they said I am inclined to believe that the name "Success" is going to be found on a great many warm air furnaces that will be installed in 1923, and still more from then on.

* * *

Irving S. Kemp, who recently became vice-president of the Evansville Tool Works, was invited by Henry Karges, of the Indiana Stove Works, to go with him to the municipal court one day when Henry had to look after the interests of one of his colored employees.

The following conversation took place between the judge and the prisoner:

"Where were you born?"

"Memphis."

"And were you brought up there?"

"Yes, Yo Honah, ve'y often."

* * *

Every year at this time, the Chicago Tuberculosis Institute makes an appeal to its friends asking them to purchase and use Penny Christmas Seals, and I am glad to help this worthy cause, not only by purchasing a goodly number of stamps,

1922 Christmas Seal.

but also by asking my friends among the readers of AMERICAN ARTISAN to do their share.

To show how much can be accomplished by the hearty cooperation of the public, I am only going to cite the fact that from the contributions received by the Institute during the 1921 Christmas Seal campaign, public health nurses have been employed, tuberculosis clinics and inspection of school children and health centers have been maintained.

During December these Christmas Seals will be sold. Many will be sent through the mail to prospective buyers and department stores and other business places will have them for sale.

When they appear, dig down in your pocket, Friend Reader, and buy enough to last for your correspondence during the entire month of December.

You will be helping a very worthy cause.

* * *

Whenever I meet "Judge" Grosscup—be it "on the road" or at the Hardware Club of Chicago, he usually inveigles me into a game of rotation pool, and sometimes he beats me.

The other day he sent me a clipping announcing that a Bohemian pool and billiard expert had arrived in this country on an exhibition tour. The heading of the clipping bore a supposed reference to me, but I am going to bet the Judge the price of one of his Anchor brand wringers that this same professional would never dare to try to make any of the fancy shots he executes when he beats me.

* * *

The Old Pacer.

I'm just an old horse
  But I've had my day,
Now I work for a farmer
  Drawing sweet hay.

Once I was proud
  And paced the track!
Ahead of all others
  Alack, alack!

Here on the farm
  I simply live,
And watch the steel nags
  Trouble give.

But—sometimes
  I would like once more
To hear the cheers
  As in days of yore.

And feel the bit,
  The tang of the air
And the voice of the boy
  With the tangled hair.

—Carlotta Bonheur Stearns.

Facts of Warm Air Heating and Ventilating.

Reports of Progress in Warm Air Heater Research Work. Ventilating Factories, Theatres and Other Buildings.

Western Warm Air Heating Meeting to Be December Sixth.

The date of the annual meeting of the Western Warm Air Furnace & Supply Association has been changed to December sixth, the first session being called to order at ten o'clock in the forenoon. The meeting place is at the Hotel Sherman, Chicago.

President R. W. Menk states that members and others who may wish to attend can secure round trip tickets from all points in Iowa, Minnesota and Missouri at the rate of one and one-third fare, on account of the International Live Stock Show.

How These Merchants Keep Christmas Trade at Home.

The merchants of Grimsbay, Ontario, all combined to prevent most of the Christmas gift business from going to Hamilton, the nearest large city, by a series of seasonable attractions, the chief of which was a Community Christmas Tree. This beautifully decorated tree stood in the heart of the town, and all sorts of publicity was resorted to in order to bring the greatest crowds to Grimsby on the Saturday before Christmas.

The preliminary event was a Christmas parade, with Santa Claus, who beamed on the crowd that lined the streets, riding in a gorgeously decorated motor car. A boy scout band preceded Santa's car, with more boy scouts marching alongside the automobile. The parade concluded before the Community Christmas Tree, before which a large and enthusiastic crowd gathered. Bags of candy were handed out to the kiddies, with inexpensive gifts for the grown-ups. More excitement was provided by the releasing of fifteen balloons from a tall building. Attached to each balloon was an order good for a free chicken, goose or turkey. A scramble ensued for the balloons, which flew all over the town. This cooperation served to keep the people in the town on the busiest day of the year, and all of the Grimsby merchants experienced heavy sales so that all their efforts and donations were really worth while.

Chicago Public School Class Rooms Are Kept at 68 Degrees With 40 Per Cent Humidity.

Chief Engineer John Howatt Describes System by Which Proper Amount of Humidity Is Maintained.

SO many inquiries have been received regarding humidity in our classrooms and its effect on comfort conditions that a discussion of the fundamental facts about humidity in the air insofar as it affects ventilation, may be of interest.

Just what humidity means in ventilation work may be had by considering the average Chicago condition. The outdoor relative humidity in Chicago is comparatively high, averaging between 60 and 70 per cent. The local Weather Bureau Office takes three humidity readings daily: one at 7 a. m., one at noon, and one at 7 p. m. Ordinarily the relative humidity is highest in the morning, is lowest at noon, and rises again toward evening. The average outdoor temperature in Chicago during the winter season in the day time is 20 degrees. Assume, therefore, an outdoor temperature of 20 degrees and an outdoor relative humidity of 50 per cent; at 20 degrees temperature a cubic foot of air is capable of holding 1.2 grains of moisture; at 50 per cent relative humidity, therefore, it will have 0.6 grains of moisture. This cubic foot of air is taken from outdoors into the heating and ventilating system at one of our school buildings and delivered into a classroom with a temperature of 70 degrees. If no additional moisture is added to that cubic foot of air it will still have its 0.6 grains of moisture, but it will have a temperature of 70 degress instead of 20 degrees. The capacity of air for holding moisture increases very rapidly with an increase in temperature, so that a cubic foot of air at 70 degrees instead of having a fifty per cent relative humidity when it contains 0.6 grains per cubic foot would have less than 10 per cent relative humidity. A cubic foot of air at 70 degrees holds 8 grains of moisture at saturation; we attempt to maintain forty per cent relative humidity in our classrooms, so that at 70 degrees temperature and 40 per cent relative humidity each cubic foot of air will contain 3.2 grains of moisture; we had 0.6 of a grain brought in with the outdoor air so it is necessary to artificially add the difference between 3.2 and 0.6 or 2.6 grains of moisture per cubic foot in order to provide a 70 degrees temperature and 40 per cent relative humidity condition. We are conditioning and handling in this way approximately ten million cubic feet of air in the Chicago public school system every minute from 7 o'clock in the morning until 3 o'clock in the afternoon every day of the heating season; that means a total of twenty-six million grains of moisture must be added every minute under the conditions outlined. Approximately one million, five hundred thousand grains of

moisture are discharged every minute from the lungs of the four hundred thousand public school children; that leaves about 3,500 pounds of water vapor, that must be added to the air in the ventilating system by other means. This is but one of the jobs of the engineer custodian at a school building. The conditioning of this volume of air requires the combustion of a great deal of fuel—approximately 150,000 tons every season—but if the conditions in our classrooms are healthful, I believe the money spent in this way is money very well spent. I know that the air conditions in our school rooms are far superior to those in the average home or steam heated apartment.

We attempt to maintain a temperature of 68 degrees with a relative humidity of 40 per cent in our classrooms during the winter season. There has been some question raised as to why we have established this temperature and relative humidity as a standard. A number of years ago John W. Shepherd, assistant principal of the Chicago Normal College, conducted a series of experiments and tests, using as subjects a large number of pupils of the beginning high school age. A standard Chicago classroom was used in conducting the experiments, and usual classroom work was done throughout the period of the tests. Temperature and relative humidity were varied, the different subjects indicating at what points they felt too cold, at what points they felt too warm, and at what points they felt comfortable. These points were plotted on cross section paper, and a curve drawn through the average of the points indicating the condition too warm, a similar curve indicating the condition too cold, and a third curve midway between the other two indicating an average condition of comfort. On this chart, under winter conditions with the ordinary winter clothing worn and ordinary classroom work being done, it was shown that the average comfort curve crosses the 40 per cent relative humidity line at a point opposite a temperature of 68 degrees dry bulb. This comfort curve shows that the temperature must be increased with a decrease in the relative humidity, and vice versa. The demonstrations showed too that it is impossible to have an agreement among any group of persons upon just what temperature and what relative humidity are the most comfortable; some of the subjects want a temperature warmer than that indicated by the comfort curve while some others a temperature lower. It is, of course, impossible to carry 40 different temperatures in a classroom to accommodate the 48 different occupants. We are compelled to carry a temperature which seems to be most agreeable to the greatest number. It is evident, therefore, that no matter what temperature or relative humidity is carried in a classroom some in the room will not be satisfied with it.

The experiments and demonstrations started by Professor Shepherd were considered at a number of meetings by the Chicago Commission on Ventilation and later by the Chicago Board of Health. The Board extended the tests so as to include workers other than those in school and developed a series of curves showing the results of their experiments and demonstrations. It was found that the effect the rate of air movement has upon the comfort conditions, and also that the nature of the work is a factor that must be considered. It is found that older persons demand higher temperatures than persons of school age; children are comfortable apparently at a somewhat lower temperature than are adults. We have suspected for some time that complaints of cold rooms originate frequently with the teacher rather than with the pupils, and that the teacher is using her own feeling of comfort or discomfort in arriving at a basis for her complaint.

Studies of comfortable classroom temperatures indicate that the wet bulb temperature should govern rather than the dry bulb. The thermostats on the market are all governed by dry bulb temperatures, the relative humidity having nothing to do with their action. If a practical wet bulb thermostat is developed, it will improve the automatic control of comfort conditions in a marked degree.

In considering the humidification of air in our classrooms, a word on the method of humidification may be of interest. In any central system of ventilation, such as is used in our school system, a central system of humidification is the simplest. There are three central station methods of introducing moisture into the air in common use. First, by means of an air washer. When an air washer is used in connection with a ventilation system the amount of moisture which will be picked up by the air passing through the air washer spray is determined somewhat by the temperature of the air washer water. Steam coils in a hot well or air washer tank are controlled by a diaphragm valve which governs the flow of steam and the temperature of the water used in the air washer. If the humidity in the room becomes too low, the valve supplying steam to the coils in the air washer tank is opened, the air washer water temperature is raised, and a larger amount of water vapor will be picked up by the air in passing through the spray. When the humidity becomes excessive the diaphragm valve is closed and the air washer water is cooled off with a reduction in water vapor picked up by the air. The second method of humidification consists of open pans in the ventilating chamber in which the water is boiled by means of high pressure steam coils. The rate of boiling of the water, which determines the rate at which the vapor will be given off, is controlled by diaphragm valves and humidistats the same as in the air washer type of humidification system. This has the advantage of always discharging pure water vapor in the air. The system used in the Chicago public schools consists of the injection of water vapor direct into the air chamber by means of perforated steam pipes, the supply of

steam to them being controlled by a diaphragm valve just as in the other systems named. This is the simplest and most direct method of adding moisture to the air and is not objectionable where water is pure as it is in Chicago and where boiler compounds giving steam unpleasant odors are not required in connection with boiler plant operation.

A number of school principals have asked how they can determine the relative humidity in their school building. They are not satisfied with the statement of the engineer that the relative humidity is 40 per cent; they want to be shown or to be put in a position where they can determine it for themselves. Unfortunately there is no direct reading instrument on the market for this purpose which can be depended upon. The sling psychrometer consisting of two thermometers, the bulb of one being covered with moist wicking, the bulb of the other being dry, is the most accurate instrument for testing relative humidity and is, in fact, the only instrument that can be depended upon. To use the sling psychrometer it is whirled in the air a few moments and the reading of the wet bulb and dry bulb thermometers noted; the difference in the reading of these two thermometers determines the relative humidity. Relative humidity tables which were originally prepared by the United States Government are used in conjunction with the sling psychrometer, and from these tables the relative humidity corresponding to each degree difference in reading between the wet and dry bulb thermometers at each dry bulb temperature can be obtained. Of course it is possible to purchase indicating hygrometers in a department store at the same counter that home barometers are sold, at prices from one dollar each up. There is no objection to any principal buying these instruments if they are bought for the purpose of taking them apart to see how they are constructed, but if they are purchased for the purpose of checking up the relative humidity in the classrooms, money spent in that way will be wasted because of the frequent setting and calibrating which these hygrometers require in order to record as accurately as they should. An instrument that is not correct is worse than none at all.

A practical indication of the relative humidity in a classroom is the moisture precipitation on the windows. With a relative humidity of 40 per cent and a classroom temperature of 68 degrees, a moisture precipitation should take place on the window panes when the outside temperature is 20 degrees or less. In fact it is moisture precipitation on windows and outside walls that limits the relative humidity in classrooms from a practical standpoint to 40 per cent. Experience has shown us that if the humidity is carried any higher there will be an excessive moisture deposit on outside walls and windows which ruins decorations and is otherwise objectionable.

Temperature and relative humidity have been considered here only from a comfort standpoint, but medical authorities have made extensive studies and report that the health curve follows very closely the comfort curve. I am of the opinion that when the outdoor weather conditions will permit it a relative humidity higher than 40 per cent would be more healthful. When air is drawn into the lungs it passes through a rather complete air sterilization system; it first encounters moist hair in the nostrils which stops all of the large particles floating in the air; it is then carried through a tortuous passage, the inner surface of which is lined with moist mucous membrane. This membrane catches and holds all of the dust in the air. We know that most of the bacteria ride in the air on the dust particles; the bacteria, therefore, are held by this mucous membrane, so that expired air is almost sterile and free from dust and bacteria. If the relative humidity is low the temperature has to be correspondingly higher for comfort; this means that when air is drawn into the nostrils the evaporation of moisture from the air passage will be excessive, reducing the power of these membranes to hold the dust particles; an increase in temperature and lowering of humidity, moreover, result in an increase in the number of dust particles. Therefore, the air passages have more work to do in the elimination of dust in the air and have their power to do it reduced. It is logical to assume, therefore, that a higher humidity up to a certain point is more healthful, but we are limited in the amount of moisture we can carry in the air in our classrooms by the condensation on outside walls and windows and by an unpleasant clammy feeling of the clothing.

New Flexible Steel Furnace Cleaner Announced.

The introduction of a new flexible steel furnace cleaner is announced by the Wegener Manufacturing Company of Indianapolis, and is expected to be of interest to the furnace trade in general.

The new cleaner is described as having two spring steel straps, four feet long, with a disc that folds as the two-section handle is adjusted.

The disc is designed to operate in all makes and sizes of furnaces using a hollow channel radiator, thereby making it unnecessary to carry more than one size. The disc proper is entered in the radiator edgewise, thus parting the soot as it is pushed half-way round; then handles are adjusted, which opens the disc, and on being drawn out the soot is removed. The cleaner operates, right or left handed. The disc is oval shaped with one side flat for radiators having flat bottoms.

Pioneer Furnace Manufacturer Passes Away.

J. E. Snyder, Vice-president of the Hess-Snyder Company, Massillon, Ohio, manufacturer of stoves and warm air furnaces, died recently at the age of seventy-seven.

"Successful Heating" Preaches Better Ethics and Cooperation in Furnace Industry.

Success Heater and Manufacturing Company Announces Policy of Fair and Upright Dealing in Publication.

"MISREPRESENTATION of our products will not be tolerated—the good will of satisfied users is more important for a substantial future than the big profits of many sales dishonestly made."

With this strong enunciation of policy, *Successful Heating,* the monthly house publication of the Success Heater and Manufacturing Company of Des Moines, Iowa, carries a new message of cooperation between manufacturer, dealer and user. The publication made its first monthly appearance in September, with this declaration from President and General Manager John P. Wagner:

"The Success Heater & Manufacturing Company recognizing in the furnace industry a large field for public service, as well as for personal endeavor, propose that its foundation shall rest on sincerity, fraternity and fair dealing. We believe that the dignity of this service demands those methods of administration and salesmanship which have become standardized in the trade ethics of other industries.

"We therefore declare our purpose in placing before the public the merits of our own goods to avoid belittling our competitors or disparaging their products.

"We acknowledge the moral responsibility of our organization for the trade ethics of our employees and our duty to lead the way to the right and honest transaction of our affairs.

"We pledge ourselves to test by these principles and daily conduct of our business."

The leading article is captioned "Build Your Business on the Basis of Knowledge," being a plea for careful thinking on the part of the dealer and an offer of full sales assistance from the maker.

The October issue carries an article on "Plunder-Merchandising," which it defines as merchandise "in which quality, workmanship, service and satisfaction have been sacrificed to create bargains."

"Goods Should Bear a Price Proportionate to Their Value," argues another leading article, which declares:

"There are different grades of quality in nearly all materials, but when a buyer insists on or expects a high-grade quality at a low-grade price, he is at cross purposes with all the ethics and principles governing business.

"Price alone is not the deciding factor only as it is used as a measure of quality and results.

"Goods sold at a low price are so sold not because the manufacturers are philanthropists, but because the measure of quality sets the standard, and the prices asked are usually the ultimate of the great consuming public's measure of quality."

Advertising Timed as Jack Frost Arrives Brings Furnace Sales and Repair Calls.

Enterprising Firm Makes Unique Appeal for Buying Furnaces in Warm Season.

WHILE furnaces may be purchased and sold in most parts of the United States throughout the year, the dead of winter is least appropriate. The need of the furnace may be the most appealing at this season, and the decision to purchase may be made at this time, but it is hardly likely the installation will be made then.

As the coal retailers of the country have for years stressed the "Buy Your Coal Now" in the summer time, and thus equalize distribution and prices, so the furance dealers should impress their prospective customers to examine and buy in the warmer seasons.

"Why Wait Until the Snow Flies?" asks Trotter's, well known furnace dealers of East Liverpool, Ohio, in an interesting advertise-

Warm Season Furnace Selling Ad Prepared By Trotter's, East Liverpool, Ohio, Dealer.

ment in the *Evening Review* of that city.

This caption challenges interest, and the idea, as stated above is a good one. Continuing, the reader is invited to "make your personal investigation now and prove to your own satisfaction that the Premier your money goes farther when you invest in a Premier."

The ad, which includes a cut, is well balanced, but the "display" appears in an inline type, when a bold, heavy type would have attracted and held the eye more effectively.

This same timeliness and seasonal appeal is to be found in the follow-up ad, which is also reproduced herewith. "The First Frost of the Season" is a catchy line and shows originality. The ad has a newsy slant, which is intriguing to the reader and leads him along until, with the nip of the frost in mind, he is ready to grasp the telephone and summon Trotter's expert at once.

Timely and Seasonal Furnace Selling Appeal.

is the most powerful furnace made." A glance at the reproduction of the ad will indicate that the latter part of the statement appears in display type. There follows these concrete suggestions:

"The absolute smoke proof construction, the labor saving shaking device and other important features will convince you. Come in and see for yourself." Let us explain why

U. S. Warns Against Aluminum Paint on Radiators.

A bulletin just issued by the Bureau of Standards, U. S. Department of Commerce, suggests a unique way to keep the inside of a tent cool, and also gives some interesting information on the use of aluminum paint and its relation to heat radiation. The bulletin follows:

Some time ago the Bureau of Standards was requested by a branch of Air Service to devise a means for keeping the interior of balloon hangars at as low a temperature as possible.

If the outside of the tent is covered with a highly reflecting substance, such as white paint, while the inside is covered with aluminum paint, the radiation into the interior of the tent may be reduced by at least 78 to 81 per cent. The reason why this method of painting has this desirable effect is that the white paint reflects the sun's rays while the aluminum paint is a poor radiator of the long wave-length heat rays. Of course, it must be remembered that this scheme for painting tents would have just the reverse effect at night and would prevent the heat on the inside of the tent from escaping into the cooler air outside.

At this time of the year no one is particularly interested in a means for keeping the inside of tents cool, but summer will come again and the means which the Bureau has devised for keeping out the sun's heat from cloth-covered enclosures is of interest in any event. Moreover, it has an equal application in just the reverse way in getting the greatest amount of heat from heating appliances.

This same work proves that aluminum paint is the poorest possible kind of a coating for heat radiators in houses, at least from the point of view of obtaining the greatest amount of heat from a given surface, since the aluminum paint has a tendency to keep the heat inside and not allow it to escape into the room.

L. G. Colburn Is Sales Manager of Success Warm Air Heaters.

L. G. Colburn, who is well known in the warm air heating trade, has been appointed sales manager of the Success Heater & Manufacturing Company, Des Moines, Iowa.

Mr. Colburn's long experience in this field should make him a valuable aid to President Wagner, who has sent the following announcement to the company's salesmen:

L. J. Colburn.

"This is to advise you that Mr. L. G. Colburn of Milwaukee has come with us in the capacity of Sales Manager, having assumed his duties on the sixteenth day of November, 1922.

"Mr. Colburn was formerly connected with the Meyer Furnace Company of Peoria, prior to that time with the Mueller Furnace Company of Milwaukee.

"Your contact in the future will therefore be with Mr. Colburn and it is our sincere desire that you cooperate with him to your fullest extent in promoting the Company's best interests and we believe that a close faithful cooperation with him will reflect better sales results to our mutual benefit."

Allow Worn Out Heating Mains to Be Discontinued.

In granting to the Southern Illinois Light & Power Company authority to discontinue service to certain hot water consumers on an outlying extension of the system, which had been unwisely made, the Illinois Public Utilities Commission said that when the useful life of these outlying mains had expired, and the fixed charges on the cost of rehabilitation could not be borne by the consumers connected thereto, except through prohibitive rates, it would not be fair or equitable, under existing circumstances, to require other consumers to assume these fixed charges.

Bad Ventilation Impairs Efficiency, If Not Health.

"Although we find rules and regulations being laid down for the ventilation of school houses," observes H. S. Taylor, chief engineer of the Management Engineering and Development Company, Dayton, Ohio, speaking before the recent Safety Congress, "no concerted movement has as yet taken place to so provide for industrial plants or other structures where the greater number of our male population and a fair proportion of the opposite sex spend their working hours. To be sure, the subject of ventilation is one of importance in many industries, but study has been made and improvements perfected as an aid in the betterment of product, and not with the safety of the operators in view.

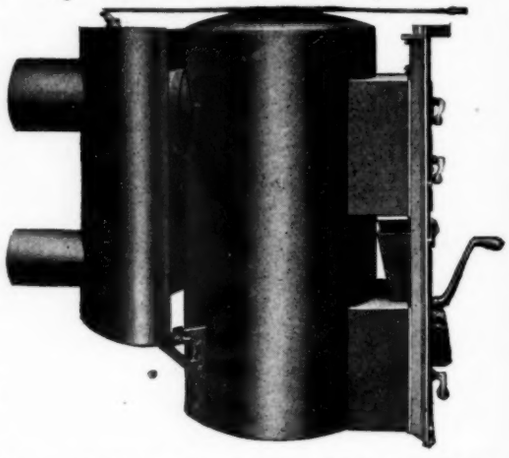
"A man who works in a poorly-ventilated department," continued the speaker, "is not at his best. Conditions may be such that they do not impair in any way his health, but at the same time they do impair his efficiency, and this impaired efficiency is a liability to the firm for which he works, and if this workman is a machine hand, where at least normal precaution must be taken to prevent accident to himself or to fellow workmen, impaired efficiency must be a reaction of this man's mental system, as well as physical, and with his mental system impaired, the quickness of those senses controlled directly from the brain that warn us of danger, fail at a critical time, and either a minor or major accident results."

The above outline was sketched to convey the principle that through the health of the workmen we can, to a great extent, improve his chances of avoiding accidents. In other words, the better the health and thus the condition of the human being, the more alert his senses are to the dangers surrounding his occupation, dangers that might cause accident to him alone or to his fellow workmen as well.

Claims Welded Seams Positively Prevent Gas Leaks.

The heavy steel furnace illustrated herewith is similar to other steel furnaces except that it has all the seams welded by the oxy-acetylene process. It is one of the new series manufactured by the Waterman-Waterbury Company, Minneapolis, Minnesota.

It is a heavy steel furnace similar in construction to steel furnaces that have been made for years past, except that this new Waterbury Furnace has all seams welded by the oxy-acetylene process.



New Welded Steel Furnace Made by Waterman-Waterbury Company, Minneapolis.

The manufacturers claim that this welded construction positively prevents the escape of gas, smoke and coal dust into the furnace casing during the life of the furnace body and thus positively eliminates one great objection to warm air heating.

The Waterman-Waterbury Company also announces the publication of a new booklet on heating entitled "Heating Facts," in which they have incorporated the latest accepted rules governing the installation of warm air furnaces, both pipe and pipeless.

Practical Helps and Patterns for the Tinsmith.

Aids to the Improvement of Craftsmanship and Business. News from Various Branches of the Sheet Metal Trade.

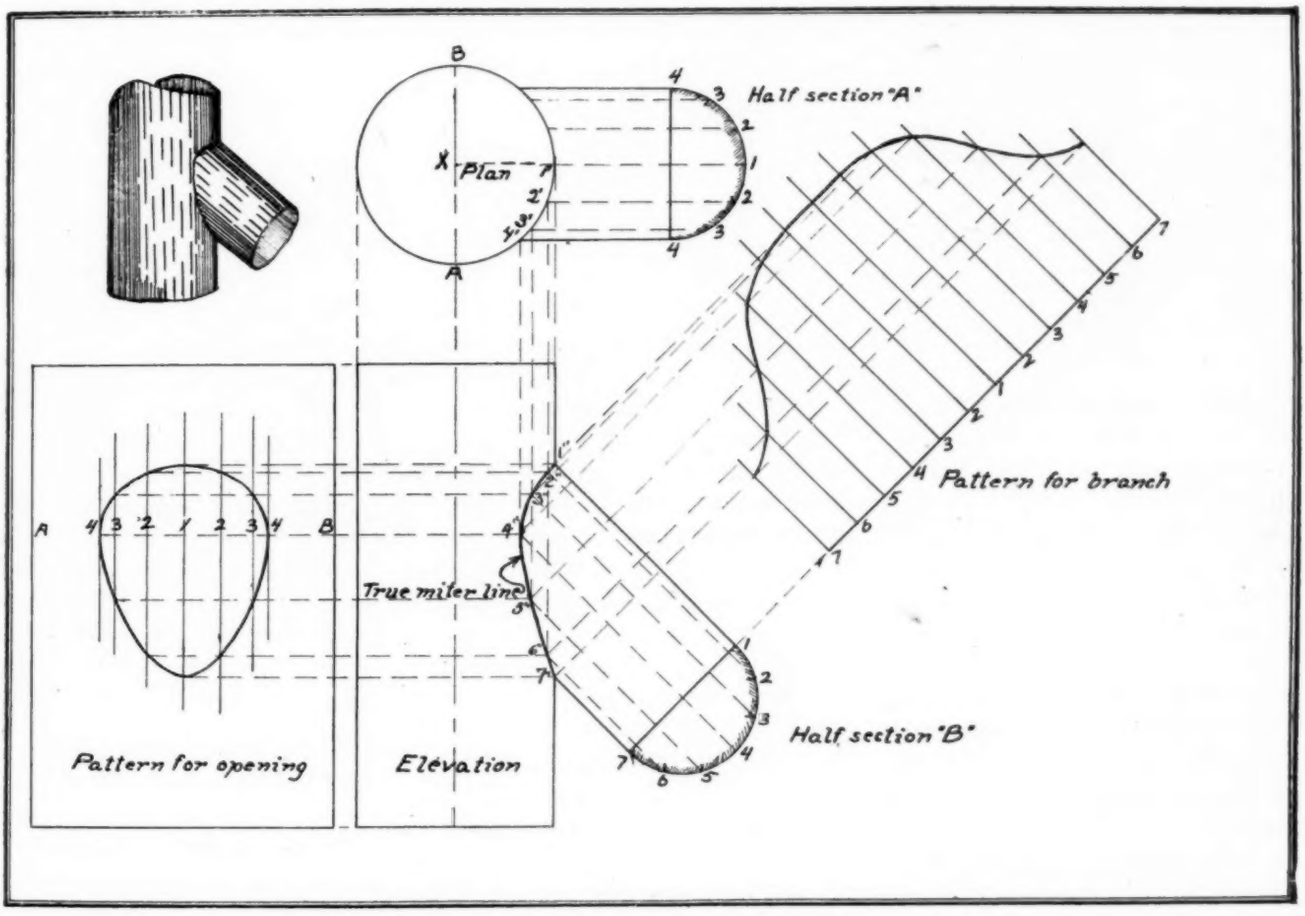
Patterns for Incline Branch.

By O. W. Kothe, Principal, St. Louis Technical Institute, St. Louis, Missouri. Written especially for American Artisan and Hardware Record.

In making branches for smoke-pipes the sheet metal worker should use the branch in this drawing in preference to the tee of the same diameter on a right angle, because here the flow of the air from the tee into the main pipe emerges without rebounding and causing considerable friction. But still as it is, this fitting does not yet allow for the increased area made by entering the tee branch, but this will not change the development, if a paper joint is added just before the tee is set in, so that the main pipe will have the combined area of the branch pipe and the main.

We first draw the plan view by describing the large circle in the center X, to suit the size of the main pipe, whatever that may be. Then extend from X a center line and describe the half section "A" for the branch pipe. Divide this half section in any number of equal parts and project lines back to intersect the large circle as in 1′-2′-3′-4′, etc. Observe how this treatment shows us how far the branch pipe sets over the main pipe, and how much lower each line drops from the center, as between 1′-2′-3′-4′, which gives us, you might say, the altitudinal spaces of how the lines from section "A" intersect the large pipe.

Next draw the elevation of main pipe by dropping lines from all points as 1′-2′-3′-4′. Then at any convenient place set in the tee, reproducing section "A" from plan and all its points and setting as section "B." Now the angle of this branch as a center line 4-4″, can be made anything desired, or required, but a 45 degree is generally considered the practice, and often a 30 degree is preferable, because it enables the air to merge with that of the main pipe with less friction. So from each point in the section "B" draw lines parallel to the center line 4-4″ until they intersect lines from plan at similar number, as in points 1″-2″-3″-4″-5″, etc. This gives us the line of penetration between the branch and the main pipe. Notice that by considering this branch pipe in elevation as a pivot no matter in what angle it is



Suggested Patterns for Incline Branch.

swung to, the lines from B will intersect those of plan, and this will cut off the tee lines and thereby make the intersection between the tee and the pipe.

To set out the pattern for the branch extend a line 1-7 of elevation indefinitely and on this line set the circumference for the branch pipe, picking the spaces from "B" and setting them off in numerical order. Then at right angles to this line, square out stretchout lines so that these lines are parallel with the center line of branch 4-4". Next from each point in the miter line of elevation, square out lines until they intersect those in stretchout of similar number. Observe that we cut off the lines in pattern to suit the length of lines in elevation and that makes the pattern. Many workmen prefer to step them off with dividers rather than projecting them with a tee square or triangle. But this is optional as either method is satisfactory.

In setting out the pattern for opening if this is desired, then notice that the branch fits over the main pipe equal to twice the distance of 1'-2'-3'-4' of plan and hence this must be cut out in order to permit the tee to fit on. So pick these spaces from plan and set off on a line as A-B to the left of elevation as 4-4. Drop stretchout lines and then from each point in the miter line project over points until they intersect lines in stretchout at similar number. Through these intersections sketch a uniform curve and you have the pattern for opening in pipe.

The workman should observe when we speak of projecting lines until they intersect lines of similar number, we mean that line 2 of elevation must intersect with line 2 in plan, or line 4 in elevation must intersect with line 4 in pattern. We cannot mix our lines and having them intersect at random, because that would not make anything. In the working out of geometrical construction it is just the same as in mathematics as 2 x 2 make 4.

E. E. Zideck Will Start New Series of Articles and Lessons on Auto Radiator Repair.

This New Series Will Be in Form of Questions and Answers on Specific Problems in Practical Work.

THE Radiator Repair articles by E. E. Zideck which were published in AMERICAN ARTISAN during the past year, found many attentive readers. Many sheet metal workers have written us for back copies of the paper, desiring to take up the repair lessons from the start.

Many others have written asking for a continuation of the articles, saying that they have studied them and derived much instruction from them.

But Mr. Zideck, having been in constant mail communication with the bulk of those reading his articles, says that it is necessary to start all over again, as he feels that the method of imparting instruction by means of general articles is not the best.

So he has determined to conduct a regular lessons course in AMERICAN ARTISAN, asking questions, and invites readers who care to write to answer the questions as best they know how, and have them corrected by him in subsequent issue of AMERICAN ARTISAN.

The lessons will be printed in AMERICAN ARTISAN, one a week. Each lesson is accompanied by revelant questions which the student is urged to answer, preferably in writing. If he does so, and the answers are correct, he will have a few hundred answers in store, each one giving a short and precise information to one or the other important facts which it is desirable to know in radiator repairing.

Those of the readers who are studying the subject with a view of perfecting themselves in the work of radiator repairing will do well if they will answer each set of questions with each lesson, on paper, and mail it to the Radiator Repair Editor, AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago.

Mr. Zideck will examine each set of answers and reply to them in the next issue. Also, where advisable, he will write to the student directly and give such correct information as the student may want.

By this method Mr. Zideck believes to be better able to instruct (and the student to learn) than if he just wrote and the student just read in a general way about the things one must know in order to do good and remunerable radiator work.

The first lesson will appear in the issue of December 2nd and will be followed by others regularly each week.

Sheet Metal Workers' Book Gives Home Instruction.

A practical instruction manual for the apprentice, mechanic and master sheet metal worker, covering the course of instruction given to students in the sheet metal department at the New York Trade School, is to be found in a new book, just off the press by William Neubecker, and edited by Frank X. Morio.

The work includes detailed instructions on cutting, forming, soldering, preparing full sized details from architects' blue prints, developing the patterns, laying out the work on sheet metal, forming and bending on the brake and setting the work together.

The title of the book is "Home Instruction for Sheet Metal Workers." It includes 33 chapters, most important of which are on skylight and louvre work, the subject being covered completely, including flat, hipped and pitched skylights, stationary and movable louvres, turret sash, gearing, etc.

The work has over 400 pages, 684 illustrations, is bound in cloth with 15 folding plates bound separately, and may be had for $5, postpaid.

Big Field for Sheet Copper in Modern Store Fronts.

Carefully compiled statistics from all over the country indicate that approximately one-half of the rental of stores is based upon the amount of show window exposure.

Spreading realization of this fact, which has its basis in the recognized advertising value of window display, is causing shopkeepers everywhere to avail themselves of every means of obtaining the greatest return from this valuable space. The copper store-front, better window lighting and carefully studied plans of window dressing have a business-getting value that the modern retailer has been quick to see.

The rust-proof properties of copper and its happy combination of strength with resiliency, have been the basis upon which a number of companies which specialize on store-front construction have developed products which are ingenious, uniformly satisfactory, and at the same time not expensive.

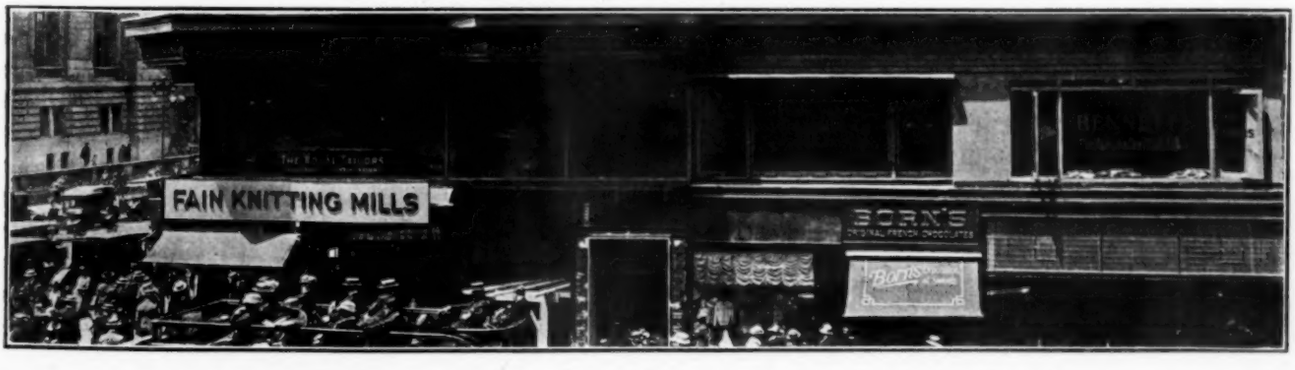
Aside from its attractive appearance, the copper store-front has made possible the utilization of every square foot of building frontage for display purposes. It has eliminated shadows cast by bulky wooden supporting structures, and provides the maximum of daylight for display of merchandise both in the window and the store.

An ingeniously planned copper store-front which is commanding constantly greater favor is the type shown in the illustration on this page. Instead of providing merely two display surfaces, one on either side of the doorway, this prevailing style makes possible the combination of a spacious entrance way flanked by long and commodious display windows on either side.

The trend is stronger toward the copper front all the time. For instance, a recent survey in Yonkers, N. Y., shows that every store now in process of construction in the territory visited is being equipped with copper fronts. On South Broadway in the last six months 19 stores have been built. Every one of them has a copper front.

The influence on copper consumption of this movement for better window display is only now becoming fully apparent. From the best statistics obtainable, this association recently completed an effort to ascertain the quantity of copper used in store-front construction.

Before and After Effect.



Double Deck Store Front and Display Windows, Frame Work Made of Copper.

Two million pounds was found to be the average annual copper consumption for this purpose.

So fast is the idea spreading, however, that this year one of the large companies which specializes on copper store-front work will alone use more than 2,000,000 pounds of copper. On this basis, the consumption of copper this year for store-front construction will apparently be well over 4,000,000 pounds.

1922 Convention Committee Renders Final Report.

From Joseph C. Gardner, President of the Indiana Sheet Metal Contractors' Association, the following statement of receipts and disbursements in connection with the Eighteenth Annual Convention of the National Association of Sheet Metal Contractors and Third Annual Convention and Exhibit of the Indiana Association, has been received, together with a report of the final meeting of the Convention Committee:

Receipts.

Booth Rentals	$5,742.50
Registration and Banquet Tickets	1,646.25
Received from Jobbers and Salesmen's Auxiliary	400.00
Received from Indianapolis Sheet Metal Contractors' Association	200.00
For Main Wiring and Current Charges from Exhibitors	85.02
Miscellaneous Refund	5.50
	$8,079.27

We, the undersigned, have this day audited the above statement and found same to be correct.

(Signed):

CHARLES E. HALL,
ALBERT H. OFF,
WILLIAM F. LAUT,
Auditing Committee.

November 1, 1922.

Disbursements.

Cadle Tabernacle Rental	$2,505.83
Decorations	179.00
Signs	154.50
Programs	242.00
Badges	255.00
Labels	101.73
Postage	123.61
Stationery and Printing (Electros, etc.)	260.36
Blue Prints	18.66
Stenographer and Multigraphic Service	166.30
Office Rent (two months)	40.00
Telephone and Telegraph Charges	38.25
Addresses by Judge Orbison and Mr. A. M. Hall	50.00
Labor (Watchman, etc.) Convention Hall	99.80
Lumber for Booths	68.80
Auto Drive for Ladies (Entertainment)	28.89
Theater Tickets for Ladies	37.25
Hoosier Athletic Club Hall Rental (card party and dance)	70.00
Prizes in connection with Card Party	24.48
Music for Card Party and Dance	75.00
Banquet and Rental of Auditorium at Athenaeum	1,754.25
Banquet Caps	40.00
Vaudeville Entertainments (Tuesday and Thursday nights)	746.00
Expense in connection with Model Tin Shop	31.20
Water, Cartersburg Spring Water Company	54.50
Trucking and Common Labor	93.20
Chair Rental for Exposition Hall	20.25
Smith Electric Company (Electric Wiring)	178.50
Tanner & Company (Band Iron, etc.)	25.73
†Standard Metal Company (Cond. Pipe, Elbows, etc.)	500.00
Miscellaneous Expense	11.79
*Balance in Bank	84.39
	$8,079.27

Report of Final Meeting of Convention Committee of the 1922 Convention of the National Association of Sheet Metal Contractors.

Meeting called to order at 7:45 p. m. by Vice-President R. W. Ingalls.

Minutes of former meeting read and approved.

Report of Treasurer Wilkening of the receipts and disbursements of moneys in connection with the convention, read by secretary. Moved by J. C. Henley that the report be adopted. Seconded by C. Vorhees. Motion carried unanimously.

Moved by Paul R. Jordan that entire balance of convention fund, after payment of cost of distribution of report, be turned over to President Gardner of the Indiana Association of Sheet Metal Contractors, for use in connection with the coming State Convention at Terre Haute. Motion seconded by J. C. Henley and carried unanimously.

†This item of $500 represents the balance paid the Standard Metal Company on acceptance by the committee of the very generous offer of the Standard Metal Company covering materials furnished and credits allowed for returns. This offer represented a financial sacrifice of about $150 each by the Standard Metal Company and the Ferdinand Dieckman Company of Cincinnati.

*Balance to be turned over to the 1923 State Convention Fund.

The foregoing motion was supplemented by a suggestion that a committee be appointed for the distribution of the financial report of the Convention Committee. Mr. Geitz, presiding, appointed F. A. Wilkening, Chairman, Joseph C. Gardner and J. C. Henley as the Committee.

C. Vorhees moved that the work of the Convention Committee be considered completed, when Treasurer Wilkening had completed the distribution of funds, and that on his tendering final check to President Gardner, the Committee be considered disbanded. Motion seconded by Joseph C. Gardner and carried unanimously.

The Convention Committee consisted of the following: E. W. Norman, Chairman; F. A. Wilkening, Treasurer; Paul R. Jordan, Secretary; H. A. Beaman, B. A. Epperson, Joseph C. Gardner, John C. Henley, Joseph Mottingly, J. L. Strahlendorf and W. S. Waters.

Two Michigan Sheet Metal Locals Report Activities.

Interesting reports of the activities of the sheet metal associations in Battle Creek and Detroit are furnished in a special account sent to AMERICAN ARTISAN AND HARDWARE RECORD by F. E. Ederle of Grand Rapids, secretary of the Michigan Sheet Metal and Roofing Contractors' Association.

At the regular meeting of the Battle Creek association, held in the office of Shouldice Brothers, several important subjects were discussed. Principal of these was a report from the state secretary on the second analysis of galvanized sheets. This analysis is one of many being taken of the various brands of metals sold in Michigan to determine the impurity content. Of course, Michigan standard was given a more severe test than the others to make sure that this sheet is up to standard set up by the organization. The mills making the product are very confident of its purity and lasting qualities but the association is taking nobody's word and are finding out for themselves.

After a full discussion of this subject it was decided to push Michigan Standard to the limit. Upon motion of William Lusk, seconded by Chris Jensen, Charles H. Eberle was voted a life member of the Association with dues of $1 a year.

The Detroit Association held its regularly monthly meeting Monday night, November 13. In the absence of President R. C. McMahon, who is on a hunting trip in Canada, Otto Schwartz, vice president, presided. Wallace Candler gave a report on the trade school which has started at Cass Tech. High School. He stated that the instructors wished the association to determine just what constituted a sheet metal journeyman. He submitted a form which he asked the members to fill out, or at least make suggestions on.

Another important topic of this meeting was the selection of a secretary to take the place of A. J. Rasch, who resigned on November 1. Mr. David M. Marshall was present and requested an opportunity of taking this job, and after a full consideration by the members, was unanimously selected for this very important work. Mr. Marshall has been connected with the sheet metal business for the past twenty years and is thoroughly conversant with the many difficulties which confront the average sheet metal contractor. He has been for many years a member of the Jackson association and is thoroughly "sold" on the association way of doing business. He will take charge of his new duties December 1.

Sell Yourself First to Yourself—Then to Others.

Mark Twain once said, "There is a lot of talking about the weather, but nothing is ever done about it." That is the trouble with a lot of the alleged thinking we do. Nothing is ever done about it.

For example, how many of us have thought sufficiently so that we could sit down and dictate in a few paragraphs just what our business stands for; what the governing principles are. In definite terms, what do we propose to do for a customer and how are we going to do it. Have we thought these things out to a clear and final conclusion?

This is not a personal efficiency test; it is an extremely practical question, particularly for those who are on the sales end of the business.

In plain old United States sit down and sell yourself completely on your own business. If you have any trouble in selling yourself, you are going to have that same trouble in selling the other fellow.

Keep on selling yourself. Keep your mind active and keep up faith in what your mind produces. Have enthusiasm and self-confidence.

The man who has convinced himself breathes a spirit of conviction that is infectious—just as, on the opposite side, the man who has never taken the time and thought to straighten the thing out in his own mind is constantly working under a handicap.

Notes and Queries

"New Marvel" Self Heating Torch.

From Benton Sheet Metal Works and Hardware, 122 Water Street, Benton Harbor, Michigan.

Kindly inform us who manufactures the "New Marvel" self heating torch.

Ans.—Lyon, Conklin and Company, Incorporated, 19 Balderston, Baltimore, Maryland.

Copper Rivets and Brass Stove Bolts.

From Leo A'Hern, 219 West Washington Street, Morris, Illinois.

Please advise me who makes copper rivets about the size of No. 1 or 1½ tinners rivets. Also tell me who makes round head brass stove bolts.

Ans.—I. U. T. Hungerford Brass and Copper Company, 80 Lafayette Street, New York City, and C. G. Hussey and Company, 224 North Jefferson Street, Chicago, Illinois. 2. U. T. Hungerford Brass and Copper Company, 80 Lafayette Street, New York City, and Patterson Brothers, 27 Park Row, New York City.

Equipment for Re-Nickeling Stove and Auto Parts.

From John Coleman, 215 South 20th Street, Mt. Vernon, Illinois.

Kindly inform me where I can purchase the necessary equipment for re-nickeling stove and auto parts.

Ans.—The Hanson and Van Winkle Company, 844 West Erie Street, Chicago, Illinois.

"Ontario Double Diamond" Roofing.

From F. G. Parks, 21 Spring Street, Oil City, Pennsylvania.

Can you tell me who makes Ontario Double Diamond Roofing, made in Aurora, Illinois.

Ans.—The Usona Manufacturing Company.

Oil Tanks for Oil Burners.

From Hunter Hardware Company, Rockford, Illinois.

Please advise me who makes oil tanks such as are used on oil burners for furnaces.

Ans.—Calumet Tank and Manufacturing Company, 37 West Van Buren Street, Chicago, Illinois; Graver Corporation, 4809 Todd Avenue, East Chicago, Indiana; Chicago Steel Tank Company, 1313 South 55th Court, Cicero, Illinois, and Hamler Boiler and Tank Company, 66th Place and 60th Avenue, Chicago, Illinois.

West Bend Aluminum.

From Braden and Schmidt, Dysart, Iowa.

Will you kindly advise us where the West Bend Aluminum is made.

Ans.—It is made by the West Bend Aluminum Company at West Bend, Wisconsin.

Thermostat.

From C. R. Bradley, 420 Edgar Street, Kalamazoo, Michigan.

Please let me know who makes a thermostat that regulates furnace draft from inside of hot air pipe.

Ans.—Powers Regulator Company, 2720 Greenview Avenue, Chicago, Illinois.

Floor Duster.

From W. J. Vierck and Son, 330 East State Street, Rockford, Illinois.

Can you tell me who makes a forty-inch floor duster made of a chemically treated wool yarn.

Ans.—This is not a stock duster, but can be made up for you by the Dearborn Duster Company, 550 West Harrison Street, Chicago, Illinois.

The Latest News About Stoves and Ranges

Items and Discussions of Interest to the Manufacturer and Retailer of Kitchen Ranges, Heating Stoves and Accessories.

Rathbone-Sard Executive Passes Away Suddenly.

Thomas H. Kendall, 67 years old, head of the sales department of the Rathbone, Sard & Company, stove manufacturers, dropped dead of heart failure on the golf links of the Aurora Country Club at Aurora, Illinois, Sunday morning, November 19th. His survivors are a son, Myron A. Kendall, and three daughters, Mrs. William Burkhardt of Cincinnati, Ohio, Mrs. Claude P. Briggs of Lakewood, Ohio, and Miss Dorris Kendall of Aurora.

A. J. Lindemann Returns from European Trip.

A. J. Lindemann, President of the A. J. Lindemann & Hoverson Company, Milwaukee, manufacturer of stoves and ranges, has returned from a three-months' business and pleasure tour of the British Isles and the Continent.

He Wanted a Flat Stove Pipe.

One of our old subscribers, L. S. Bonbrake, Peoria, Illinois, sends us the following history and humor which we are glad to publish:

"Down in the southeastern corner of Ohio, some twenty miles above the river, over a half century ago, a neighborhood of hardy old Hollanders, called "Pennsylvania Dutch," as I remember, had formed a community of farmers of sterling integrity. However, their manner of expression at times was humorous, to say the least.

"The cookstoves used by a number of them, called The Native, were double-deckers. The bottom section was very long, having three cooking holes in a row, and taking in long wood (half a fence rail?) A step up of a foot or more to the top of the upper section embraced the base oven and two cooking holes which necessitated a long, narrow stovepipe collar.

"Seven miles from town lived Joseph Rickermun, who one morning came into the store, saying:

"'Pone-proke! I want to got it, some stove pipes.'

"'All right, Mr. Rickermun! What size pipe do you want?' he asked.

"'It vas flat! Undt I think by the size of my eye it was about sixteen inches von way, undt three der oder."

"I knew at once it was for The Native, and asked him how long he wanted it.

"'Why! I want to buy it, undt pay for it, undt keep it till it vas wordt out!' he exclaimed.

"'How high up do you want it to go, Joe?' we asked.

"'I vas not want it to go up a-tall! I want it to stay on der stofe undt took the smoke oudt!'

"'Joe, what is the distance between the top of the stove and the smoke hole in the chimney?'

"'Why didn't you said so in the first places? It iss three feet seven inches and a knee' (elbow).

"While his pipe was being prepared, and knowing his family well, I asked 'how is the folks and wife?' and Joe answered, sad-like, 'My wife she don't vas complain much better; undt the doctor say she has it a chenuwine cases of der stastistericks; (hysterics), undt right on top we vas gona loose Tilley.'

"'Lose your daughter Tilley! How's that, Joe?'

"'Ya-as. Tilley vas gona get married.'

"'Well, well; when she does, come in. Tilley is a good girl, and she should have a good stove and outfit.'

"'Ya-as, Tilley was a good girl. Ober she vas not so good for handsome, she vas hell for strong. I will got it a whole fill-out from you pone-proke.'

"Joe eventually got his pipe into the wagon and started home.

"That evening I saw him again drive up to the front of the store and hurried out to meet him. There was blood in his eye as he angrily and vehemently exclaimed, 'Pone-proke! Didn't I told you my stofe var not round! It iss flat!!'

"I had overlooked flattening out the big end. I took the pipe from the wagon, saw a rivet in the end, then gave it a whale of a thump over the edge of the wagon bed, and threw it in again, flat. Joe gave one startled look at the flat end and said, 'Gosh darn,' and started on his weary way over the hills for seven miles home again."

Clean Gas Appliances Will Reduce Gas Bills.

All gas-burning appliances, in common with other equipment in well-regulated households, should be kept clean. Clean appliances mean lower gas bills, says the American Gas Association in illustrating the economical use of gas.

"Boil them occasionally in a strong solution made by dissolving washing soda or lye in water," says the association. "Rinse thoroughly with clean water and dry before using again. Take usual care to prevent strong lye solution from injuring hands.

"Oven linings can be prevented from rusting by going over them perhaps once each week with a good neutral oil, being careful not to use any oil with salt in it (such as bacon grease).

"Keep copper coils clean by using a brush or cloth once a week or so. Soot acts as an insulator and considerably less gas is required to get hot water when coils are clean. In case burners are covered or coated with scale, soot, etc., clean top burners

with a stiff brush, either with burner in place or outside of water heater, if burner is readily removed."

Special Show Room for Stoves Increases Sales.

A good plan in displaying stoves is to have a special stove room fitted up in an attractive manner. On one side of the room can be placed a row of steel or cast ranges with the elbows, collars, etc., in place on the ranges, giving them the appearance of being set up in working order. On the other side can be placed the base burners which, when arranged in a row, will attract immediate attention because of their large amount of nickel work.

By having a special room the stoves, in a great many instances, are much easier to sell. A person buying a stove has his attention quite often distracted by other goods displayed, or by people coming in to buy other articles. If a dealer has a special sales room containing nothing but stoves, the customer's attention is centered on stoves, and sales result much more quickly.

Says Easy Payment Plan Sells Most Stoves.

Jack Little, District sales manager for the Michigan Stove Company, Detroit, in Texas, Oklahoma, Arkansas, Louisiana and Cuba, has sold stoves and ranges for 17 years, 12 of which were spent in a hardware and furniture store in Mexico.

He believes that more than three out of every four stoves sold at the present time are bought on the installment plan, and that this is the plan that every stove merchant eventually must adopt if he is to make a success of this department.

Here is what he says:

"The most successful merchants I run into are the ones who have got hold of a nationally advertised line of stoves, kept the stove department in good looking shape, stocks complete, and have not been afraid to advertise locally to reap full advantage of the manufacturer's national advertising.

"At least 75 per cent of the stoves sold today are sold on the easy payment or installment plan, and any merchant, regardless of the nature of his business, hardware, furniture, or what not, must come to that plan of selling if he is to make a success of his stove department.

"Every merchant who takes on a line of stoves should insist on the manufacturer's representative taking his sales force in hand and thoroughly coaching them in the merits and selling features of the line of stoves he is to handle. A conscientious representative will himself insist on imparting this information to a willing sales force, but there are others who are prone to follow the lines of least resistance, and that is the man the dealer should demand service from, or buy his stoves from one who is willing to help him sell stoves.

"Estimating that at least 10 per cent of the stoves in this country are replaced each year normally, and that for the past three years there have not been many replacements due to the depression which apparently is almost over with now, there looms up ahead some big volume in the stove game, and every merchant would do well to look a little bit ahead and not let that time slip up on him unprepared to take care of his share of the lucrative business in stoves which is surely coming."

Center Your Efforts on One Line of Stoves.

Experienced and successful dealers admit that selling one line of stoves is the most profitable method. With three or four conflicting lines you can do justice to none of them. If a customer comes into the store and is interested in buying a stove you take her to one of the lines and explain its good points. You elaborate on the workmanship, the quality of the material used, etc., and end by telling her it is the best stove money can buy.

Suppose, however, she is interested in a stove you carry, made by some other manufacturer. What are you to do? You can not turn around and tell her the stove she likes is the best stove for her purpose, because if you do, you immediately prove to her that your talk about the other stove was not sincere. You lose stove sales—that doesn't pay.

Your Success Depends Solely on Yourself.

To know that courage is a necessary business quality—

That in business there is no referee to count you out except yourself—

That the collective cowardice called business depression need not wreck your business unless you let it—

That effort and energy create business, even if in lessened degree, in hard times as in good times and all times—

Is the Gospel of Grit.

Translated into practical terms, this means that you can, if you will, get after more of the business of your locality, add greatly to your sales, augment your usefulness to the community, increase your earning power and enlarge your profits. —E. A. Stowe.

Use Positive Suggestions Rather Than Negative Queries.

Watch the forms of expression used by your clerks. When they are waiting on customers they can invite them to make other purchases in such a manner as to win admiration for their salesmanship and also win additional trade for your store. The invitation should be extended in an affirmative form such as: "What else can I show you?" or "Here's a leader in cutlery." "A very good value at $3.50." As long as clerks use the negative form of expression, "Nothing else is there?" or "Don't you want some of this polish?" they are inviting refusal from the customer, which means a loss of sales to you. The little differences in wording and manners are what distinguish good salesmen from mediocre ones.

Events and Progress of the Hardware Trade.

What the Retailers, Jobbers and Manufacturers Are Doing. Latest Selling Methods and Experiences of Successful Men.

Nicholas Hardware Company Will Sell $500,000 in 1922.

The Nicholas Hardware Company, Oak Park, Illinois, has announced plans for a campaign to reach the half-million dollar mark for the year's business. The store for the first ten months of the year sold $376,000 worth of goods. Mr. Nicholas called his staff together and with their confidence of success he announced that they would extend every effort to sell $124,000 more in merchandise before the year closed.

A banquet was held at the Oak Park Arms hotel last Tuesday evening and over forty of the employes attended. Complete plans were outlined. Specific amounts were allotted to each individual for their own mark. A thermometer will be placed in the front of the store to indicate to the public the progress of the sale.

"We believe," said Mr. Nicholas, "that the public is interested in the advancement of this community store. We believe that a frank statement to the people of this community who made this store what it is today will interest them and that they will want to help us reach our goal. They know that increased sales cut down the overhead and that as in the past they will be given the benefit of the lower costs."

The history of the Nicholas Hardware Company is one of the bright spots on the commercial map of Oak Park. From a small beginning over fifteen years ago this store has reached a place where every one speaks of it when local business houses are discussed. It is held up as an example by advertising men, by realtors, who want to interest new business houses; by the trade papers who tell other communities of the Oak Park success and many others.

From Mr. Nicholas' records it is learned that the total business for the first year this store was operated was less than the business for the month of October just passed.

Not only do they do a large local trade but they ship to distant points of the country between twenty and twenty-five tons of merchandise per month.

Fireplace fittings is one of the lines in which the Nicholas Hardware Company is not exceeded by any store in the loop or any other place. People come from miles to select them from the largest and best stock in Cook county.

Increase Your Sales By Seeking Mail Orders.

In distributing or mailing announcements of a special sale, which describes and prices the merchandise offered, it is a good idea to wrap two self addressed envelopes inside the folded circular. Also state in your circular that orders by mail are solicited, while the goods cannot be shipped until day of the sale the orders can be mailed to you in advance, thus insuring prompt shipment. Money for goods and sufficient charges for parcel post or express charges should be remitted with order, and your circular should contain the explanation that after package charges are paid, any sum remaining will be returned. Always in asking for orders by mail even the simplest details should be explained.

Demand for U. S. Hardware in Europe and Near East Grows.

Consul Hunt, St. Etienne, reports to the Department of Commerce that the hardware trade in France is becoming more active, except in the tool and general supplies trade for the steel and iron industries, where the prices are disputed to a narrow margin and where orders are almost wholly suspended.

The shortage of dwelling houses, which has forced a certain activity in house-building throughout the region, is one of the leading influences for revival in the hardware industry, and it is expected that the building operations will be a strong factor in the general recovery.

Better hardware business in Spain and Portugal.

Commercial Attache Charles H. Cunningham, Madrid, Spain, reports that in Northern Spain and Portugal he found an increased interest in American hardware and indications of a larger market in the near future.

Possible market for refrigerators in Syria.

Consul Allen, Damascus, Syria, says it is believed that the home refrigerator could be introduced into Syria and a considerable demand for it developed through an agency working, preferably in Beirut.

Sincerity and Knowledge of Goods Are Essential in Selling.

The man and woman in search of merchandise or service expects the person behind the counter to know his stock, know his goods, the uses to which they are put, and the prices. They will be glad to have his suggestions if these suggestions are put in an ordinary tone, and carry the sincere ring of truth. But the average person resents a simpering, prunes-and-prisms attitude. And if he buys at all, he buys in spite of it, rather than because of it.

On the other hand, undue familiarity is just as serious a misdemeanor. Very few individuals the part of salesmen or others they know only casually.

It is quite possible to be sincere without exaggerating; to be respectful without slopping over; to suggest without apology.

Suggestions and Plans for Window Displays.

Instructive Examples from Exhibits in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition.

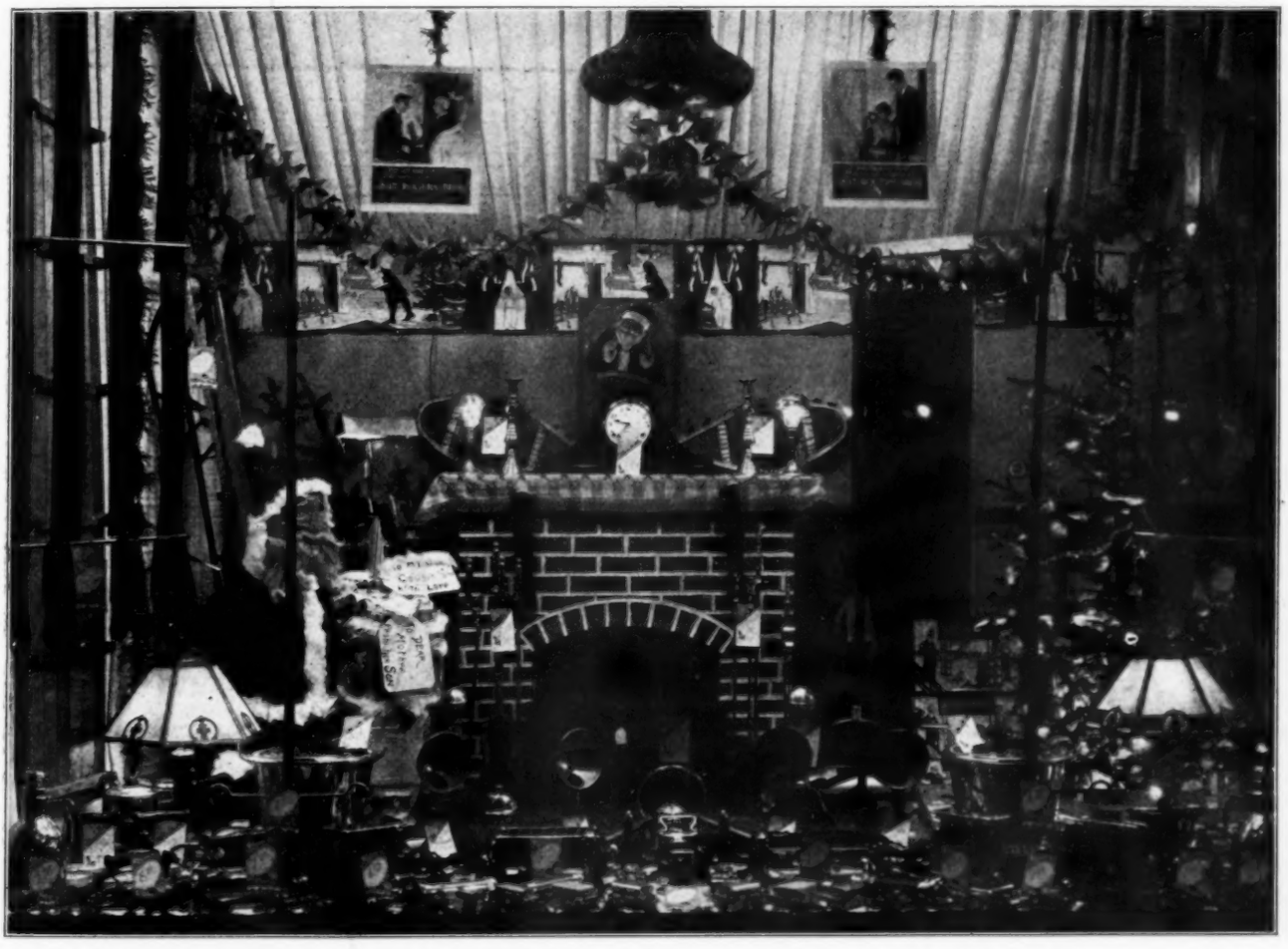
Have You Begun to Plan Your Christmas Window?

With the approach of the Christmas season, the alert hardware merchant is beginning to plan his selling campaign—to redress his stock, organize his sales force, lay out his advertising and plan his window dressing.

At Christmas time everybody wants gift suggestions, and for at least ninety percent of all gifts—considering the practical as well as the sentimental—those that have a utilitarian value are in demand. "Gifts of Utility" is a slogan with a sound and fundamental basis. An obvious suggestion, then, is to carefully canvass the stock for a list of those articles which make useful and pleasing gifts and, then, to consider the purpose of most effectively presenting them.

For suggestions as how to display a great number of articles, amid a setting which at every turn of the eye is remindful of the Christmas season, we have here a window design prepared by G. V. White for Sumner Company, Limited, hardware, plate glass and mill supply dealers of Moncton, New Brunswick, Canada. Descriptive notes of the window, as furnished by the designer, follow:

"Christmas window. Back wall and fire place made of beaver board, painted. Red paper in crate with electric light behind. All goods marked with price cards. Christmas tree in corner trimmed and lighted at night. Santa Claus in other corner has full pack with presents marked for different members of the family. Had largest Christmas trade in our history."



Excellent Window Display of Articles Suitable for Christmas Presents. Arranged by G. V. White for Sumner Company, Limited, Moncton, New Brunswick, Canada.

The idea of the window design is to sell goods, and if it falls short of this result—no matter how attractive or interesting or what not—it will have failed. Better then before worrying about the form or plan of the design to consider the articles to be merchandised.

There is an excellent symmetry and balance in this window. The panel of Yuletide designs in the

background is artistic and in good taste. It should be observed that the many articles placed closeup on the foreground provide *real* gift suggestions, and that they are priced on neat cards in large, plain lettering.

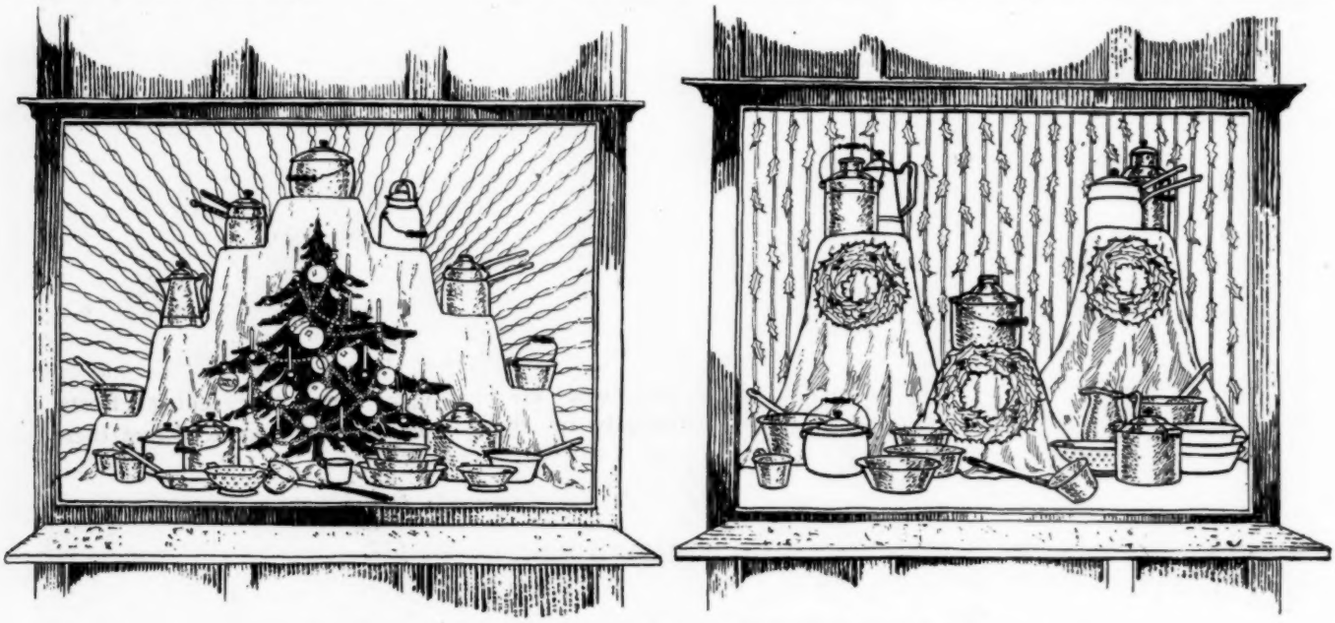
Kitchen Utensils Make Good Christmas Gifts.

The housefurnishings department which plays up only unusual goods for the Christmas gift trade is overlooking good sales and good profits. More attention to the wonderful possibilities of staples and stock articles as gifts would cut down the troubles of being "stuck" with shelves full of "once a year stuff." And the growing tendency, particularly among women, towards sensible and useful gifts is turning such possibilities into realities for the dealer who understands. If it is properly featured, there is more profit and less heartache in enameled ware cooking utensils, for instance, than in a lot of gaudy "whatnots" and "utilities" which are never used after the first time.

In giving presents, the wise shoppers always choose things which the recipient can use every day and nothing comes nearer the heart of a housewife than a good enameled ware cooking utensil. Enameled ware should therefore be included in every holiday advertisement and in every holiday window. And when a Christmas shopper is in doubt, the suggestion of enameled ware by the salesperson never fails to be rewarded by a gleam of satisfaction from the customer.

Definite suggestions as to enameled ware for gifts should be made whenever possible. For instance—for a recent bride or for a woman who has not been housekeeping long, some of the bigger pieces of enameled ware particularly will probably be much appreciated—such as a roaster, or a large preserving kettle. For the housewife of long experience any utensil is welcome as she has found that a wide range of sizes of cooking utensils is very desirable—and cooking utensils are one thing there cannot be too many of in any kitchen. For the family in which there are young children, double boilers are especially desirable gifts, as are also enameled ware cup and saucers. Other good suggestions in enameled ware are: A nested set of trays, a nest of bowls which are very useful for many purposes, kettle and coffee pot set, a handy set of accessories as strainers, colanders, funnels, pitchers, etc.

The accompanying illustrations show two suggestions for effective window displays featuring utility gifts for Christmas. Too many Christmas windows are "overdone" and the idea expressed in these suggestions is simplicity. Much can be done with stock wreaths, crepe paper and a few boxes and the suggested windows are easily put up. Special price tags and cards showing gift ideas should be freely used. A complete display of utensils is desirable as almost everything in this line has a real gift value.



Two Suggestions for Holiday Window Displays of Enameled Ware.

Plan Now for Your Prize Winning Window.

Here it is again!

What?

The announcement of the annual Window Display Competition conducted by AMERICAN ARTISAN AND HARDWARE RECORD in the interests of better merchandising.

Merchants who before have entered this competition are expected to maintain their interest because they have found whether they won a prize or not that "the good window pays"—in increased sales. New readers will find the contest equally interesting and profitable.

More details of the competition and the scale of prizes will be announced later. The contest will close April 1, 1923, and the principal rules of past contests will again govern:

The photograph of the window must be accompanied by a descrip-

tion of how the display was arranged and the materials used. Each must be signed by a fictitious name and the sender's real name and address enclosed in a sealed envelope also signed by the assumed name. There is no limit to the number of photographs and displays each contestant may send in.

Begin now to plan your prize winning window. Study the Christmas windows for ideas. Follow this department for suggestions. Then build your *own idea* into the winner.

Get the Women to Come Into Your Store.

It is obvious that the retail merchant who expects to make a success of his job, must usually appeal to the woman shopper, says Archer Wall Douglas in System.

Women do most of the shopping today, and the amount they do promises to increase as women become more and more economically independent.

In the beginning, how to get and hold a woman's trade is not so much strictly a matter of business as a study in psychology.

The rules of trade that obtain with men do not always "go" with women, a fact that some merchants fail to understand.

For a long number of years the principal purchasers in retail hardware store were men, and business in them was done after a man's fashion.

But that is slowly changing, especially now that the hardware merchant is often handling house furnishing goods, and similar lines.

So the hardware man who does not cater to women buyers is likely to lose some of his business to the department store, or to some more up-to-date competitor.

The old-fashioned dark and dingy hardware store that you found in some localities, where the men worked in their shirt sleeves and smoked behind the counter, was seldom offensive to men but it does not often find favor with the women.

Most women like things to be neat, clean, and attractive. I once called upon a shrewd hardware merchant in Los Angeles, in the downtown district, right under the shadow of the big department stores, and found him so busy that he could talk to me only a minute at a time between waiting on his customers, about one-half of whom were women.

By degrees he told me the details of how he had gotten women to trade with him.

To begin with, he was a constant advertiser in the daily papers, where most of his advertising was directed at women.

The basket was presided over by an attractive young girl, who was also a good saleswoman; and she sold other articles of cutlery to almost every one of the women who bought a pair of the bargain scissors.

The store was bright, well lighted by large windows, neat as a pin, and with handsome window dressings, which caught the attention of many a passer-by.

The proprietor spent a large portion of his time at the front door, welcoming his women customers—politely, never familiarly or flippantly.

By his carefully planned policy he held the trade of the women who came to his store, despite the fierce competition of the department stores nearby.

That particular morning he had played up a big advertisement telling about the sanitary and neat appearance of some new white enameled refrigerators he had just received.

He had two well trained salesmen, who were thoroughly drilled in talking up the merits of the refrigerators. He sold five that day.

The difficulty in keeping a woman's trade is that sooner or later her personality becomes involved, often in most unexpected ways.

In the final analysis every proposition in a woman's life ultimately becomes personal; and she is likely to trade at a store or pass it by, depending on whether she does or does not like the people there who serve her.

Freshness, flippancy, or indifference to her wishes are discourtesies she can hardly forgive. For shopping is serious with her, not only because it is a recreation, and possibly an adventure, but likewise because it calls for the exercise of her best judgment in spending whatever the money is that she has in her possession.

Base Your Selling on the Business Revival.

If you believed that there was a time-fuse bomb located somewhere in your building and that your store were going to be blown to smithereens at any moment, you would not put much energy into your merchandising.

In other words, the fear and uncertainty engendered by such a situation would have the effect of destroying your enthusiasm and confidence in the orderly development of your trade.

Your state of mind, therefore, has everything to do with the successful operation of your business.

You will be able to put more vigor into your selling efforts if you become convinced that there is no hidden bomb anywhere, figuratively speaking, and that all the economic forces are operating in your favor.

It is equivalent to a recharging of the storage batteries of your mind to learn that authoritative analysis of present conditions warrant you in concentrating your enthusiasm, confidence, and ability upon greater selling efforts today.

The summary of industrial conditions throughout the United States set forth in the monthly business review of the Federal Reserve Bank of Atlanta shows that there is a continuance of business and industrial activities at the relatively high rate recently attained.

In fact, production has shown further increases in some lines, while in those which normally would be noticeably affected by seasonal influences, decreases on the whole have been relatively slight.

Urge Dealers to Educate Public as to Prices.

The *Members Exchange,* the monthly bulletin of The Wisconsin Retail Hardware Association, in its current number issues some timely suggestions as to how merchants should educate their customers on prices. It is suggested that dealers could profitably use a small space. —about 3½ inches in an ad each week, dealing with the subject and establishing these points:

First, that the merchant does not control prices.

Second, that the retail merchant lowers his prices following declines in the wholesale markets and is therefore entitled to the rise on advancing markets.

Third, that competition — keen competition—prevents the merchant from holding up prices even if he wanted to.

Fourth, that there is a vast difference between what the merchant gets for his goods and his REAL profit.

Fifth, that the cost of his goods and the cost of carrying on his business and which he maintains in the interests of his customers, absorbs the bulk of his selling prices.

Sixth, that the prices of today are as low as is possible to make them on practically everything sold in the hardware stores, and that even some articles are being sold at a loss.

Coming Conventions

Western Warm Air Furnace and Supply Association, Annual Meeting, Hotel Sherman, Chicago, Illinois, December 6, 1922. John H. Hussie, Secretary, 2407 Cuming Street, Omaha, Nebraska.

Western Implement and Hardware Association, Kansas City, Missouri, January 16, 17, 18 and 19, 1923. Exhibition in Convention Hall. H. J. Hodge, Secretary, Abilene, Kansas.

Texas Hardware and Implement Association, Dallas, Texas, January 23, 24 and 25, 1923. A. M. Cox, Secretary, 822 Dallas County Bank Building, Dallas, Texas.

Mountain States Hardware and Implement Association, Denver, Colorado, January 23, 24 and 25, 1923. W. W. McCallister, Secretary-Treasurer, Boulder, Colorado.

Kentucky Hardware and Implement Association and Exhibition, Jefferson County Armory, Louisville, Kentucky, January 23, 24, 25 and 26, 1923. J. M. Stone, Secretary, Sturgis, Kentucky.

West Virginia Hardware Association Convention and Exhibition, Huntington, West Virginia, January 30 and 31, and February 1, 1923. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

South Dakota Retail Hardware Association, Sioux Falls, South Dakota, January 16, 17, 18 and 19, 1923. H. O. Roberts, Secretary, 1120 Metropolitan Life Building, Minneapolis, Minnesota.

Idaho Retail Hardware and Implement Dealers' Association, Boise, Idaho, January 31, February 1 and 2, 1923. E. E. Lucas, Secretary, Hutton Building, Spokane, Washington.

Indiana Retail Hardware Association Convention and Exhibition, Indianapolis, Indiana, January 30 and February 1 and 2, 1923. G. F. Sheely, Secretary, Argos, Indiana.

Oklahoma Hardware and Implement Association, The Auditorium, Oklahoma City, Oklahoma, January 31, February 1, 1923. W. A. Clark, Secretary-Treasurer, 209½ West Main Street, Oklahoma City, Oklahoma.

Nebraska Retail Hardware Association, Convention and Exhibition, February 6 to 9, 1923, Omaha, George H. Dietz, Secretary-Treasurer, 414 Little Building, Lincoln, Nebraska.

Michigan Retail Hardware Convention and Exhibition, Grand Rapids, February 6, 7, 8, 9, 1923. Karl S. Judson, Exhibit Manager, 248 Morris Avenue, Grand Rapids. A. J. Scott, Secretary, Marine City, Michigan.

Virginia Retail Hardware Association, Norfolk, Virginia, February 7, 8 and 9, 1923. Thomas B. Howell, Secretary, Richmond, Virginia.

Wisconsin Retail Hardware Association, Milwaukee Auditorium, Milwaukee, Wisconsin, February 7, 8 and 9, 1923. P. J. Jacobs, Secretary, Stevens Point, Wisconsin. George W. Kornley, Manager of Exhibits, 1476 Green Bay Avenue, Milwaukee, Wisconsin.

Pennsylvania and Atlantic Seaboard Hardware Association Convention and Exhibition, Philadelphia Commercial Museum, Philadelphia, Pennsylvania, February 12, 13, 14, 15 and 16, 1923. Sharon E. Jones, Secretary, 1314 Fulton Building, Pittsburgh, Pennsylvania.

Ohio Hardware Association Convention and Exhibition, Cleveland, Ohio, February 13, 14, 15 and 16, 1923. Exhibition in the new Municipal Hall. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

Illinois Retail Hardware Association Convention and Exhibition, Hotel Sherman, Chicago, Illinois, February 13, 14 and 15, 1923. L. D. Nish, Secretary-Treasurer, Elgin, Illinois.

Iowa Retail Hardware Association Convention and Exhibition, Des Moines, Iowa, February 13, 14, 15 and 16, 1923. A. R. Sale, Secretary, Mason City, Iowa.

North Dakota Retail Hardware Association, Grand Forks, North Dakota, February 14, 15 and 16, 1923. C. N. Barnes, Secretary, Grand Forks, North Dakota.

Missouri Retail Hardware Association Convention and Exhibition, Planters Hotel, St. Louis, Missouri, February 20, 21 and 22, 1923. F. X. Becherer, Secretary, 5106 North Broadway, St. Louis, Missouri.

Minnesota Retail Hardware Association, Duluth, Minnesota, February 20, 21, 22 and 23, 1923. H. O. Roberts, Secretary, 1120 Metropolitan Life Building, Minneapolis, Minnesota.

New England Hardware Dealers' Association Convention and Exhibition, Mechanics' Building, Boston, Massachusetts, February 21, 22 and 23, 1923. George A. Fiel, Secretary, 10 High Street, Boston, Massachusetts.

New York State Retail Hardware Association Convention and Exposition, Rochester, New York, February 20, 21, 22 and 23, 1923. Headquarters, Powers Hotel. Sessions and Exposition at Exposition Park. John B. Foley, Secretary, City Bank Building, Syracuse, New York.

Michigan Sheet Metal and Roofing Contractors' Association, Bay City, February 26, 27, 28 and March 1, 1923. Frank E. Ederle, Secretary. 1121 Franklin Street, S. E., Grand Rapids, Michigan.

American Hardware Manufacturers' Association, Spring Convention, Windsor Hotel, Jacksonville, Florida, April 24, 25, 26 and 27, 1923. Frederick D. Mitchell, Secretary - Treasurer, 1819 Broadway, New York City.

Southern Hardware Jobbers' Association, Windsor Hotel, Jacksonville, Florida, April 24, 25, 26 and 27, 1922. John Donnan, Secretary-Treasurer, Richmond, Virginia.

Old Guard Southern Hardware Salesmen's Association, Windsor Hotel, Jacksonville, Florida, April 25, 1923. R. P. Boyd, Secretary-Treasurer, R. F. D. 4, Knoxville, Tennessee.

Hardware Association of the Carolinas, Columbia, South Carolina, May 8, 9, 10 and 11, 1923. T. W. Dixon, Secretary-Treasurer, Charlotte, North Carolina.

Arkansas Retail Hardware Association, May, 1923. (Place to be announced later.) L. P. Biggs, Secretary, 815-816 Southern Trust Building, Little Rock, Arkansas.

National Retail Hardware Association, Richmond, Virginia, June, 1923. Herbert P. Sheets, Secretary-Treasurer, Argos, Indiana.

Southeastern Retail Hardware and Implement Association, covering Tennessee, Alabama, Georgia and Florida. (Date and place to be announced later.) Walter Harlan, Secretary-Treasurer, 701 Grand Theater Building, Atlanta, Georgia.

Retail Hardware Doings

Georgia.

The Meddin Hardware Company at 116 West Congress Street, Savanna, has been destroyed by fire.

Illinois.

Max Mayer has opened a hardware store at 8909 Commercial Avenue, South Chicago.

At New Douglas, Mr. Gordon Olive will take charge of the hardware store.

Indiana.

Jacob Life has purchased the Huffman Hardware Store in West Main Street, Portland.

Armstrong and Hume have sold their hardware store in Zionsville to D. A. Surber of Pittsboro.

Minnesota.

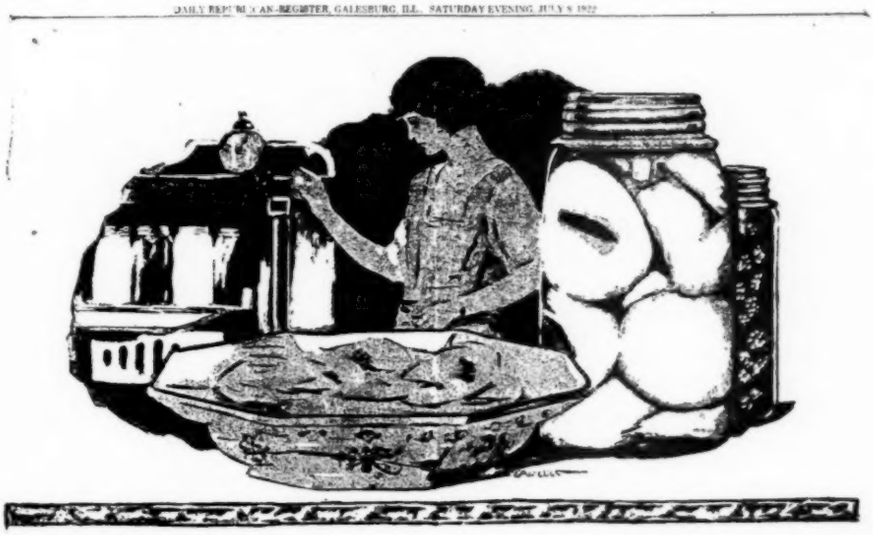
Herman Tritabaugh has purchased the interest of his partner, H. O. Mix, in the hardware business at Rockford.

Study and Interpretation of Advertisements.

You Can Make Your Advertisements More Gainful by Avoiding the Faults and Profiting by the Good Qualities of Others.

The ad published by the Galesburg Railway, Lighting and Power Company in the *Daily Republican Register* of Galesburg, Illinois, and reproduced on this page, gives a forceful illustration of how a national advertising and selling campaign can be linked up with local advertising. Here is a full page ad prepared by experts, and all the Galesburg Railway, Lighting & Power Company had to do was to add their firm name at the bottom.

The psychological appeal of this ad is to create in the mind of the housewife a desire to equip her kitchen, which is her home manufacturing plant, in the most efficient manner. The method of approach is to challenge her interest in "A Better Way to Can at Home." Now the chances are she is a pretty good home canner already, but she is suddenly made aware that she could probably improve her product by doing it the "Lorain Oven Method" way. Straightway, if she is in the market for a new range at all, it's safe to bet she is going to read on.



DAILY REPUBLICAN-REGISTER, GALESBURG, ILL., SATURDAY EVENING, JULY 8, 1922

A better way to can at home

One easy turn of the Lorain oven heat regulator gives you a choice of the measured and controlled oven heats for any kind of oven cooking or baking

JUDGE for yourself whether the Lorain Oven Method is "A Better Way to Can at Home." Take peaches, for instance. The luscious, golden yellow peach, firm, sweet and full of flavor, is one of America's favorite fruits.

Here's the way to can peaches by the Lorain Oven Method:

Wash and sterilize the jars, covers and rubbers, just as you always do. Scald the peaches to loosen skins; dip quickly in cold water; skin, and cut in halves; pack halves in jars.

Now fill the jars with boiling water, or with syrup if additional sweetening is desired. Place rubbers in position, and adjust covers *loosely*.

Light the gas oven. Set the Lorain Oven Heat Regulator at 250 degrees. Place the filled jars in the oven; close the door. Leave quart jars in oven one hour; pint jars forty minutes. Then go out of the kitchen and forget you are canning until the alarm clock tells you time is up. When the clock signals, remove the jars from oven and tighten the covers. Your canning is done! Simple, isn't it? Yet this is what you've accomplished by this new method:

First: *The fruits or vegetables retain that fresh-from-the-garden flavor.*
Second. *They keep firm.*
Third: *They have a much finer appearance.*
Fourth: *You've avoided all kettle-boiling and all standing and stirring over a hot stove*
Fifth: *You've done your canning in much less working-time than is required by any other process*
Sixth: *You've saved gas*

Any fruit or vegetable may be canned perfectly by the Lorain Oven Method. The process was perfected in the laboratories of the American Stove Company after months of experimentation. Today this method is being used successfully by thousands upon thousands of housewives who are the happy possessors of gas ranges equipped with this remarkable device—the Lorain Oven Heat Regulator.

If you want to learn how to make canning a joy instead of a task, come in and ask us to demonstrate this method. We'll be glad to do it. Also we'll give you a copy of the Lorain Oven Canning Chart which explains in detail how to can 37 different fruits and vegetables. It will be a valuable addition to your canning and cookery library.

CLARK JEWEL **Gas Ranges** EQUIPPED WITH **LORAIN** OVEN HEAT REGULATOR

FOR SALE BY

Galesburg Railway Lighting & Power Co

The baked-on finish of Clark Jewel Gas Ranges gives them a lustrous, durable surface that is as easy to keep clean as it is good to look at. All-steel construction prevents breakage. A variety of pleasing styles and convenient sizes to choose from.

In the original this ad appeared greatly enlarged, so that the whole type message could be easily read.

* * *

Ralston's Hardware Store in Edinburg, Indiana, hits for business two ways in the accompanying advertisement, reduced from a space of two columns by two and one-half inches. Whether you needed

Let Us Figure With You On A New

FURNACE

OR

FURNACE REPAIRING

All Work Guaranteed

RALSTON'S HARDWARE STORE.

EDINBURG, IND.

a new furnace or whether your old one required repairing, the chances are the appeal would catch your eye. "All work guaranteed" is a strong point. Furthermore, it will be observed that the Ralston store doesn't say "Let us sell you a new furnace," but "Let us figure with you" on one. Such good advertising is no doubt backed by good enough salesmanship to close the deal.

* * *

Fortunate is the man who can dramatize his own job, discover in it all the dramatic factors which are so widely diffused in human relations and derive real enjoyment through selling his goods.

Review of Conditions in the Metal Markets.

General Situation in the Steel Industry. Report of Prices and Tendencies in Sheet Metals, Pig Iron, etc.

Non-Ferrous Metals Prices Strong, Buying Moderate.

With strong markets prevailing for copper, lead and zinc, the week's non-ferrious market reflected the condition of producers who are well sold up for the current year. Copper quotations remained at 13.87½ cents for electrolytic, with a few sales at 14 cents. With lead at 7 to 7.25 cents, spot delivery New York, and an East St. Louis base of 6.85 cents, the market was quiet, with new orders not plentiful and buyers shy. Zinc was quoted in the New York market at 7.15 to 7.20 cents, East St. Louis.

Copper.

For deliveries through the first quarter most of the copper selling agencies have returned to the 14 cents delivered price for electrolytic. Actual business has been done in good volume with domestic consumers at 13.87½c, delivered, but sellers at this price have become scarce. The heavy shipments in October, estimated at over 90,000 tons, and the recent improvement in the export sales to Germany and France have stiffened the market. Export sales were made the past week at 14.12½ cents, c.i.f. foreign port.

Foundry buying of copper has been good. Some of the principal casting copper refiners are booked through to the end of the year and are asking 13.50 cents, f. o. b. refinery.

Buying of finished copper and brass products has fallen off somewhat recently but most of the large wire drawers and brass mills still have orders booked which will keep them busy for the next two or four months at the present rate of operations.

Zinc.

Some sellers of zinc have withdrawn and ceased their efforts for orders, but there is still a certain amount of selling pressure with a total absence of buying interest, and in consequence the tone is easier. November and December are quotable nominally at 7:15 cents to 7.20 cents East St. Louis basis. The tonnage that could be bought at present prices is probably not large, but quite sufficient on an unwilling market to have its effect.

Zinc sales for export were light this week, but total sales the past three weeks for shipment to Great Britain, France and Germany aggregated over 15,000 tons. Domestic demand has been rather light. Prime western sold up to 7.40 cents, East St. Louis, for prompt shipment, recently, but subsequently reacted to 7.20 cents on profit taking resales by dealers. High grade was quoted 8.25 cents, delivered.

Lead.

With the principal lead producers sold up to January 1, the current published prices are nominal. Pig lead for shipment this year is quoted at 7.25 cents, New York, and 6.85 to 6.95 cents, East St. Louis, in the outside market as against 7 cents and 6.80 cents by the leading interest.

In the New York district the shortage has been keenly felt and has been intensified by the continuous traffic delays.

Solder.

Chicago warehouses quoted solder prices as follows: Warranted, 50.50, per 100 pounds, $24.00; Commercial, 45-55, per 100 pounds, $22.50; and Plumbers', per 100 pounds, $21.25.

Tin.

With the dullness of the domestic tin market reflected abroad, prices reacted from the high level of last week, closing quotations for Straits tin, spot and nearby, being $36.37 and for futures, $36.30. It becomes increasingly evident that the failure of America to support the advance has interfered with the program of the bull party abroad, and there are many who believe that the upward movement is over for the time being. As there is only a thin market to sell on at present the large holders of stocks will have to wait for a more favorable time to liquidate, that is unless the outside speculators in London should be seized with another spell of bullish enthusiasm.

Easier Sterling Exchange also caused an easing of prices. Ninety-nine per cent tin continues to be quoted at from ¾ to a cent below Straits.

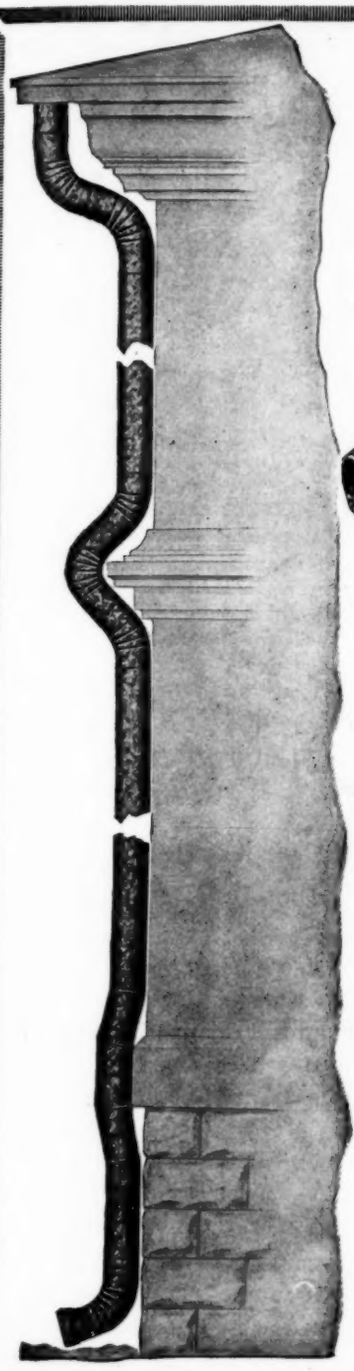
Bolts and Nuts.

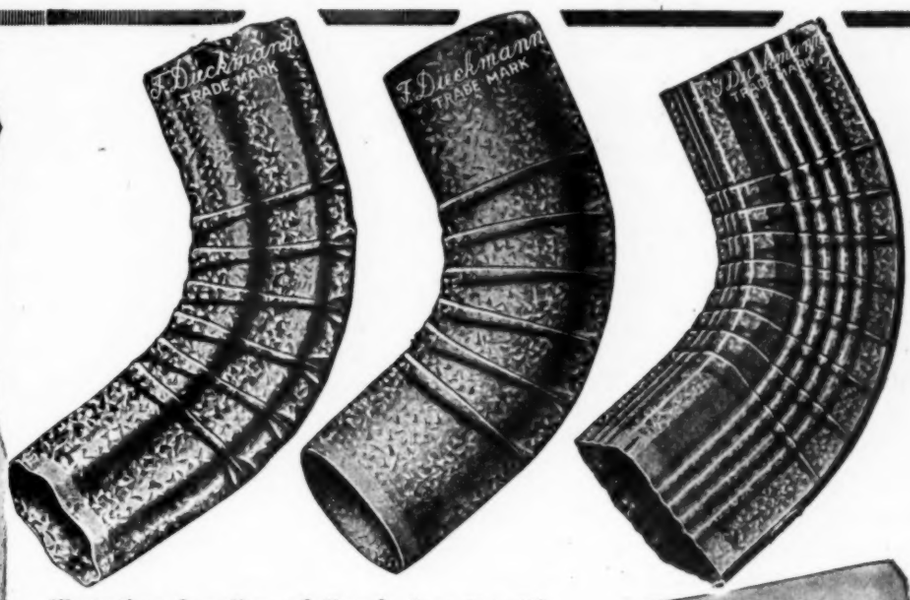
New bolt, nut and rivet orders are reported small. In the Chicago market specifications for nuts and bolts have fallen off but sellers are holding firmly to the September discounts and believe that business will show a revival at the first of the year. There is no decline in consumption; in fact the automobile industry demand is running better than ever before at this season. One Chicago plant has exceeded all production records this month.

First quarter inquiries are being made in the Pittsburgh district. The impression is that prices will remain unchanged. Railroads as well as car and locomotive repair shops are in the market for fairly large tonnages of bolts, nuts and rivets.

Nails and Wire.

Chicago prices for nails and wire remain unchanged. Specifications for wire are lighter but whether this is a temporary recession or portends a gradual slackening in business such as generally obtains during the winter season cannot be ascertained. It is notable, however, that the leading producer has not been able to



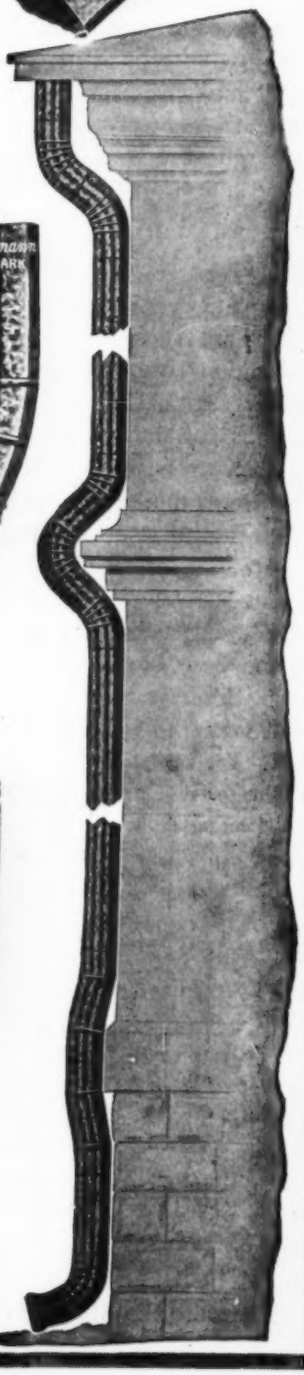


Illustrations show elbows of all angles from 10 to 90°. Note how close each cluster of elbows hugs the walls.

Use short angle elbows to get around sills, cornice mouldings and all other projections, thus preventing the commonly known soldered break in the pipe.

By using combinations of this kind, soldering is not necessary as elbows fit into each other very snug and the small opening at the joints will permit sewer gases to escape, thus increasing the life of the entire spout.

These elbows are made in all designs and your dimensions can be arranged right on the job.



TRADE MARK

F. Dieckmann

This Emblem of Quality is stamped in each.

THE FERDINAND DIECKMANN COMPANY

P. O. Station B **Cincinnati, Ohio**

increase operations and that buyers generally have not accumulated any stocks. Business from the South is unusually good and open weather has prolonged the demand for nails in certain sections of the West and North.

Pittsburgh reports more or less heavy bookings of smooth wire, as well as nails, but on barbed wire and fencing, orders are not so large. One Eastern Pennsylvania producer is reported to have turned down a considerable amount of wire business.

Jobbers are ordering nails of various sizes, and the aggregate volume on the books of prominent producers soon will tax their potential output. Plain wire is still quoted at 2.45 cents, and nails, at 2.70 cents, Pittsburgh base, with one of the leading interests quoting a dollar in advance.

Tin Plate.

Tin plate producers in the Pittsburgh territory continue to receive specifications from large car manufacturers, particularly those that supply the salmon industry of the Northwest.

Talk among buyers and sellers alike seems to be centered on the price for the coming year, yet production is really large for the season, running at nearer 600,000 than 500,000 base boxes a week. The leading interest is expected to announce its first quarter price this week. In the meantime the market for the present remains at $4.75 per base box, Pittsburgh.

Independent tin plate mills seem to be picking up business right along, although the market presents a superficial appearance of quietness. At any rate they are running fairly well, at say 60% of capacity, and do not seem to be making any tin plate for stock. Current sales seem to be at the full price of $4.75, though a slight quantity differential may possibly be given occasionally. At any rate the market is much stronger at the price than it has averaged in the past since the price first become the official or regular price.

Sheets.

One of the leading Chicago producers has opened its books for first quarter delivery for sheets, and is taking orders at the same prices it previously quoted, namely, 2.50 cents, Pittsburgh, for blue annealed, 3.35 cents for black and 4.35 cents for galvanized. A number of eastern independents continue to take some prompt business in this market at the same prices.

The Pittsburgh market on black sheets weakened considerably, one Ohio mill recently entering the market at 3.25 cents, or ten cents under the market. This tendency does not apply to galvanized sheets, due presumably to the stiffer prices, in spelter. Automobile sheets continue at 4.70 to 5.00 cents with an uninterrupted demand.

Old Metals.

Wholesale quotations in the Chicago district which should be considered as nominal are as follows: Old steel axles, $18.00 to $18.50; old iron axles, $24.50 to $25.00; steel springs, $20.50 to $21.00; No. 1 wrought iron, $18.00 to $18.50; No. 1 cast, $16.00 to $16.50, all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 9 cents; light brass, 5 cents; lead 4¾ cents; zinc, 3¾ cents; and cast aluminum, 14 cents. The demand for nearly all lines is heavy.

Iron and Steel Prices Lag as Production Sets New High Mark for Past Two Years.

Consumption Keeping Pace but Buyers Are Holding Off—Chicago Prompt Iron Is $30.

OPERATING close to 80 per cent capacity, the iron and steel industry set a record for the week which has not been surpassed in two years. The independent sheet mill output has been lifted to the highest point ever reported statistically, scoring almost 92 per cent in October.

With operations well sustained at the high rate recently reached, consumption of steel keeps close step with production. Mills still have overdue deliveries of considerable volume and are counting on operating at the present rate well into the first quarter of 1923, barring winter blockades. The inquiries of railroads have added 175 to 225 locomotives and nearly 7,000 cars to pending lists. Activity in fabricated steel work is still promising.

In the Chicago pig iron market, buying is light and confined to purchases for prompt shipment. Further price concessions seem to be seen by users, but their pressure for deliveries against contracts is indicative both of the maintenance in this territory of the melt and of depleted stocks.

Little first quarter business has been placed, but melters are showing more interest in their requirements and sounding for prices. Prompt iron demands a maximum of $30 base furnace. The market is weak, but the furnaces are low in fuel, and a severe turn of the weather for any period of duration would seriously cripple production.

The slump in the Pittsburgh market continued, with prices falling 50 cents to $1 below last week. Purchases are withheld and only small lots are being placed. Shipments were aided by the lifting of the embargo by the Pennsylvania for the four days of the week.

As low as $27, valley, now is quoted on basic and the market spread is $27 and $28. Producers are quoting Bessemer at $31.50, but intimate that if enough business were booked at $30 they would go into blast.

The malleable market is untested at $29, valley, and tonnage probably would develop a dollar higher price. No. 2 foundry (1.75 to 2.75% silicon) is down $1 to $27.50 and $28.-50, valley.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON.

Chicago Foundry..	30 00
Southern Fdy. No. 2	29 01 to 30 01
Lake Sup. Charcoal	36 15
Malleable	30 00

FIRST QUALITY BRIGHT TIN PLATES.

		Per Box
IC	14x20 112 sheets	$10 00
IX	14x20	11 25
IXX	14x20	12 60
IXXX	14x20	13 90
IXXXX	14x20	15 25
IC	20x28	20 00
IX	20x28	22 50
IXX	20x28	25 20
IXXX	20x28	27 80
IXXXX	20x28	30 50

COKE PLATES.

Cokes, 180 lbs...	20x28	$11 80
Cokes, 200 lbs...	20x28	12 00
Cokes, 214 lbs...IC	20x28	12 35
Cokes, 270 lbs...IX	20x28	14 10

BLUE ANNEALED SHEETS.

Base .....per 100 lbs. $4 00

ONE PASS COLD ROLLED BLACK.

No. 18-20.....per 100 lbs.	$4 65
No. 22-24.....per 100 lbs.	4 70
No. 26.....per 100 lbs.	4 75
No. 27.....per 100 lbs.	4 80
No. 28.....per 100 lbs.	4 85
No. 29.....per 100 lbs.	4 95

GALVANIZED.

No. 16.....per 100 lbs.	$5 10
No. 18-20.....per 100 lbs.	5 25
No. 22-24.....per 100 lbs.	5 40
No. 26.....per 100 lbs.	5 55
No. 27.....per 100 lbs.	5 70
No. 28.....per 100 lbs.	5 85
No. 30.....per 100 lbs.	6 35

BAR SOLDER.

Warranted.

50-50 .....per 100 lbs. $24 00

Commercial

45-55 .....per 100 lbs.	22 50
Plumbers ....per 100 lbs.	21 25

ZINC.

In Slabs 8 25

SHEET ZINC.

Cask lots, stock.....10¼c
Less than cask lots.....10¾c

COPPER.

Copper Sheets, base.....31¼c

LEAD.

American Pig	$ 7 75
Bar	8 50

Sheet.

Full coils ....per 100 lbs.	10 00
Cut Coils .....per 100 lbs.	10 25

TIN.

Pig Tin .....per lb. 38½c
Bar Tin 41c

HARDWARE, SHEET METAL SUPPLIES, WARM AIR HEATER FITTINGS AND ACCESSORIES.

ADZES.

Coopers'.
Barton's .....Net
White's .....Net

AMMUNITION.

Shells, Loaded, Peters.
Loaded with Black Powder 18%
Loaded with Smokeless Powder 18%
Winchester.
Smokeless Repeater Grade .....20 & 4%
Smokeless Leader Grade .....20 & 4%
Black Powder .....20 & 4%
U. M. C.
Nitro Club .....20 & 4%
Arrow .....20 & 4%
New Club .....20 & 4%
Gun Wads—per 1000.
Winchester 7- 8 gauge 10&7½%
" 9-10 gauge 10&7½%
" 11-28 gauge 10&7½%

ASBESTOS.

Paper up to 1/16.....6c per lb.
Rollboard .....6¼c per lb.
Millboard 3/32 to ⅛.....6c per lb.
Corrugated Paper (250 sq. ft. to roll)....$6.00 per roll

AUGERS.

Boring Machine.....40&10%
Carpenter's Nut 50%
Hollow.
Stearns No. 4, doz.....$1150
Post Hole.
Iwan's Post Hole and Well 25%
Vaughan's, 4 to 9 in.....$15 60

AWLS.

Brad.

No. 3 Handled..per doz.	$0 65	
No. 1050 Handled	"	1 40
Patent asst'd, 1 to 4	"	35

Harness.

Common .....per doz.	$1 05	
Patent	"	1 00

Peg.

Shouldered	"	1 60
Patented	"	75

Scratch.
No. IS. Socket Handled .....per doz. $2 50
No. 344 Goodell-Pratt, list less.....35-40%
No. 7 Stanley.....per doz. $2 25

AXES.

First Quality, Single Bitted (unhandled), 3 to 4 lb., per doz.....$12 00
Good Quality, Single Bitted, same weight, per doz. 11 00

BALANCES, SPRING.

Universal.
Sight Spring.....List less 25%
Straight .....List less 25%

BARS, CROW.

Steel, 4 ft., 10 lb.....$ 80
Steel, 5 ft., 18 lb..... 1 40
Pinch bars, 5½ ft., 24 lb..... 1 60

BARS, WRECKING.

V. & B. No. 12	$0 34
V. & B. No. 24	0 43
V. & B. No. 324	0 57
V. & B. No. 30	0 48
V. & B. No. 330	0 62

BEVEL, TEE.

Stanley's Rosewood handle, new list .....Nets
Stanley iron handle.....Nets

BINDING CLOTH.

Zinc 55%
Brass 40%
Brass, plated 60%

BITS.

All Vaughan and Bushnell.

Screw Driver, No. 30, each	$ 27
Screw Driver, No. 1, each	16
Reamer, No. 80, each...	41
Reamer, No. 100, each...	41
Countersink, No. 13, each..	20
Countersink, Nos.14-15 each	27

BLADES, SAW.

Wood.
Atkins 30-in.

Nos.	6	40	26
	$8 90	$9 45	$5 40

BLOCKS.

Wooden 45%
Patent 45%

BLOW TORCHES (See Firepots).

BOARDS.

Stove.		Per Doz.
26x26, wood lined		$14 45
28x28, " "		16 95
30x30, " "		19 00
26x26, paper lined		8 15
28x28, " "		9 10
30x30, " "		10 80

Wash.
No. 760, Banner Globe (single) .....per doz. $5 25
No. 652, Banner Globe (single) .....per doz. 6 75
No. 801, Brass King, per doz. 8 25
No. 860, Single—Plain Pump 6 25

BOLTS.

Carriage, Machine, etc.
Carriage, cut thread, ⅜x6 and sizes smaller and shorter 50%
Carriage sizes, larger and longer than ⅜x6.....40-5%
Machine, ⅜x4 and sizes smaller and shorter.....50%
Machine, sizes larger and longer than ⅜x4.....75%
Stove 75-10%
Mortise, Door.
Gem, iron 5%
Gem, bronze plated.....5%
Barrel.
Cast .....Net
Wrought ..... "
Wrought, bronzed ..... "
Flush.
Wrought .....Net
Spring.
Wrought ..... "
Wrought, heavy ..... "
Square.
Wrought ..... "

BOXES.

Mail. No...	2	4	10
Per doz..	$18 00	$23 00	$29 00

Cast Iron.
Per doz. $9 50
Mitre.
Stanley's .....Net Prices
Stearns, No. 2..per doz. $30 00

BRACES, RATCHET.

V. & B. No. 444 8 in.	$4 54
V. & B. No. 222 8 in.	3 89
V. & B. No. 111 8 in.	3 55
V. & B. No. 11 8 in.	3 02

BURRS, RIVETING.

Copper Burrs only.....40-5%
Tinners' Iron Burrs only.....Net

BUTTS.

Steel, antique copper or dull brass finish—case lots—
3½x3½...per dozen pairs $3 00
4x4 " " " 4 20
Heavy Bevel steel inside sets, case lots—
.....per dozen sets 7 20
Steel bit keyed front door sets, each 1 80
Wrought brass bit keyed front door sets, each.... 3 30
Cylinder front door sets, each 7 50

CALIPERS.

Double .....Net
Inside and Outside..... "
Wing ..... "

CARRIERS.

Hay.
Diamond, Regular...each, net
Diamond, Sling... " "

CASTERS.

Standard—Ball Bearing. .....50 & 10%
Bed 40%
Common Plate.
Brass Wheel 15%
Iron and porcelain wheels, new list 50%
Philadelphia Plate, new list 50%
Martin's 40%

CATCHERS, GRASS.

No. 160S.....per doz. $12 25
No. 165S..... " " 14 01

CEMENT, FURNACE.

American Seal, 5 lb. cans, net $ 45
" " 10 lb. cans, " 90
" " 25 lb. cans, " 2 00
Asbestos, 5 lb. cans " 45
Pecora.....per 100 lbs. 7 51

CHAINS.

Proof Coil, ⅜" 100 lbs....$ 8 75
Weldless Coil, ...50-5%
Electric Cow Welded Ties, No. 00, 4½, per doz..... 2 85
Safety.
12 yds., per box..... 75
500 ft. spools, per ft.... 02

CHALK, CARPENTERS'.

Blue .....per	gro.	$2 00
Red	" "	2 00
White	" "	1 80
Common White School Crayon...	" "	0 30

CHIMNEY TOPS.

Iwan's Complete Rev. & Vent. 30%
Iwan's Iron Mountings only..35%

CHECK, DOOR.

Corbin .....Net list
Russwin .....Net list

CHISELS.

Cold.

V. & B. No. 25, ¼ in., each	$0 26
V. & B. No. 25, ⅜ in., each	41

Diamond Point.

V. & B. No. 55, ¼ in.	0 31
V. & B. No. 55, ½ in.	0 48

Firmer Bevelled.
Round Nose.

V. & B. No. 65, ¼ in.	0 29
V. & B. No. 65, ½ in.	0 40

Socket Firmer.
Cape.

V. & B. No. 50, ⅜ in.	0 31
V. & B. No. 50, ⅝ in.	0 57

CHUCKS, DRILL.

Goodell's, for Goodell's Screw Drivers.....List less 35-40%
Yankee, for Yankee Screw Drivers $6 00

CLAMPS.

Adjustable.
Martin's 30%
No. 63, Screw.....20%
No. 100, Door (Stearns) doz. $22 00
Cabinet.
Screw 20%
Carpenters'.
Steel Bar..List price plus 20%
Carriage Makers'.
2½-inch.....per doz. $ 7 00
5 - " ..... " 14 00
8 - " ..... " 28 00
12 - " ..... " 42 00
Hose.
Sherman's brass, ¾-inch per doz. $0 48
Double, brass, ¾-inch, per doz. 1 20
Saw Filers.
No. 1, Adjustable (Stearns) doz. .....$ 8 75

CLAWS, TACK.

Wood hdl. No. 10.per doz.	$1 15	
Forged steel, wood hdl.	"	2 15
Solid steel	"	3 25
Giant	"	50

CLEVISES.

Malleable .....10c lb.

CLIPPERS.

Bolt (Carolus).

No. 0	$2 50
No. 1	3 25
No. 3	4 25

CLIPS.

Axle ..... 65 & 5%
Damper.
Acme, with tail pieces, per doz. $1 35
Non Rivet tail pieces, per doz. 25
Non Rivet Clips..... 90
Hame 50

COLLARS, STOVE PIPE.

Lacquered.

Inches	5	6	7
Fancy pattern, per doz.	65c	75c	$4 00

COMPASSES.

Carpenters' 15%

COPPERS—Soldering.

Pointed Roofing.

3 lb. and heavier....per lb.		40c
2½ lb.	"	45c
2 lb.	"	48c
1½ lb.	"	55c
1 lb.	"	60c

CORD.

No. 7 Std. per doz. hanks..	$ 9 85	
No. 8 " " " "	11 40	

COTTERS, SPRING.

All sizes 87½%

COUPLINGS, HOSE.

Brass..... per doz. $2 25

CUT-OFFS.

Standard gauge..... 35%
26 gauge..... 20%
Kuehn's Korrekt Kutoffs:
Galv., plain, round or cor. rd.
Standard gauge 40%
26 gauge 10%

DAMPERS, STOVE PIPE.

Diamond.
6-inch..... per doz. $1 50
Cast "American."
6 inch per doz..... $1 50
7 " " " 2 25
8 " " " 3 60
9 " " " 5 40
10 " " " 6 75
12 " " " 8 00
Check.
7 inch, each..... $1 00
8 " " 1 25
9 " " 1 50
10 " " 1 75
12 " " 2 25
Steel Hot Air.
8 inch per doz..... $2 50
9 " " 2 75
10 " " " 3 00
12 " " " 3 50
14 " " " 4 50

DIGGERS.

Post Hole.
Iwan's Split Handle (Eureka)
4-ft. Handle...per doz. $14 00
7-ft. Handle...per doz. 36 00
Iwan's Hercules pattern, per doz. 14 90

DRILLS.

V. & B. Star, 12-inch Length.
¼, 5/16 and ⅜, each.....$ 25
⅝, each 36
1, each 54
1¼, each 81
V. & B. Star, 18-inch Length.
5/16 and ⅜, each.....$ 33
⅝, each 45
1, each 69
1¼, each 1 05

EAVES TROUGH.

79% of Standard List.
Milcor .....
Galv. Crimpedge, crated.....75%

ELBOWS—Conductor Pipe.

Galvanized Steel, Tin and Terne
Plain Round or Round Corrugated
2 to 6 inch, Std. gauge ..65%
2 to 6 inch, 26 gauge 45%
2 to 6 inch, 24 gauge 20%
Milcor .....
Galv., plain or corrugated, round flat.
Crimp. Std. gauge.....65%
26 Gauge Std. gauge.....45%
24 Gauge Std. gauge.....15%
Square Corrugated.
Standard gauge 50%
26 gauge 30%
Milcor .....
Standard gauge 50%
26 gauge 35%
Portico Elbows.
Standard Gauge Conductor Pipe, plain or corrugated.
Not nested .....70 & 5%
Nested solid.....70 & 5%

ELBOWS—Stove Pipe.

1-piece Corrugated. Uniform.

	Doz.
5-inch	$1 38
6-inch	1 54
7-inch	1 98

Special Corrugated.

	Doz.
6-inch	$1 27
7-inch	1 76

Uniform, Collar Adjustable.

	Doz.
5-inch	$1 76
6-inch	1 98
7-inch	2 48

WOOD FACES—50% off list.

FENCING.

Lawn fence, single space, 36-inch ..... $ 9 12
Lawn fence, single space, 42-inch 10 20
Lawn fence, double space, 32-inch 12 50
Lawn fence, double space, 42-inch 13 75
Field fence, 26-inch, No. 10 top and bottom 12 filling 26 50
Same, 6 filling..... 33 82
Field fence, 32-inch, No. 10 top and bottom 12 filling 30 34
Same, 6 filling..... 39 41

FILES AND RASPS.

Heller's (American).....65-5%
American 65-5%
Arcade .....60 & 10%
Black Diamond 50-5%
Eagle 60-10%
Great Western .....60 & 10%
Kearney & Foot.....60 & 10%
McClellan .....60 & 10%
Nicholson 50-10%
Simonds 60%
J. Barton Smith.....50-10-5%
X F .....Net list

FIRE POTS.

Clayton & Lambert's.
East of west boundary line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Nebraska, Kansas, Oklahoma, Amarillo, San Angelo and Laredo, Texas 55%
West of above boundary line.52%

Turner Brass Works.	Ea.
No. 43 Kerosene-Gasolene Master Torch, 1 qt.....	$5 40
No. 48 Kerosene-Gasolene Master Torch, 1 qt.....	6 73
No. 95 Double Jet Torch, Gasolene, 1 qt.....	6 95
No. 30 Kerosene-Gasolene Torch, 1 qt. (new line)..	6 48
No. 33 Single Jet Gasolene Torch, 1 qt.....	6 93
No. 53 Plbrs. Furn. Galv. Iron Tank with Bulb, 7 pts.	6 75
No. 63 Plbrs. Furn. Galv. Iron Tank with Pump, 7 pts.	7 47
No. 56 Plbrs. Furn. Straight Side Steel Tank with Bulb, 7 pts.....	8 82
No. 66 Plbrs. Furn. Straight Side Steel Tank, with Pump, 7 pts.....	9 54

Otto Berns Co.	
No. 1 Furn. Gasolene with large shield, 1 gal.....$	6 75
No. B Furn. Kerosene, 1 gal.	15 12
No. 10 Brazier, Kerosene or Gasolene, 10 gals...	47 52
No. 5 Torch, Gasolene or Kerosene, 1 pt.....	7 92
No. 83 Torch, Gasolene, 1 quart	5 40
No. 86 Torch, Gasolene, 1 pt.	4 05

GALVANIZED WARE.

	Per doz.
Pails (Competition), 8-qt...	$1 85
10-qt.	2 00
12-qt.	2 35
14-qt.	2 50
Wash tubs, No. 1.....	5 85
No. 2	7 00
No. 3	7 75

GARAGE DOOR HARDWARE.

Stanley .....All net

GAUGES.

Marking, Mortise, etc.....Nets
Wire.
Disston's 25%

GIMLETS.

Discount.....65% and 10%

GLASS.

Single Strength, A. and B. all sizes.....83 & 84%
Double Strength, A, all sizes 79%
Double Strength, B, all sizes, 85%

GLUE.

Bulk.		
B Amber .....per lb.		35c
A White	"	40c
H. S. Amber.....	"	32c
Liquid.		
Army & Navy.....40%		
Le Page's—		
List "A" 37½%		
List "B" .....35 %		
List "C" .....25 %		

GREASE, AXLE.

Wood Boxes.
Frazer's .....per gro. 13 00
Hub Lightning 7 50
Wood Pails.
Frazer's, 15 lb., $1.00; 25 lb., $1.50 each.
Hub Lightning, 15 lb., 90c; 25 lb., $1.21 each.

HAFTS, AWL.

Brad.
Common .....per doz. $0 35
Peg.
Patent, plain top. " 60
Patent, leather top " 80
Sewing.
Common ..... " 24
Patent ..... " 55

HAMMERS, HANDLED.

All V. and B.	Each, net
Blacksmiths' Hand, No. 0 26-oz. $1	00
Engineers' No. 1, 26-oz..... 1	00
Farriers', No. 7, 7-oz.....	93
Machinists', No. 1, 7-oz....	78
Nail.	
Vanadium, No. 41, 20-oz., each 1	45
Vanadium, No. 41½, 16-oz., each 1	45
V. & B., No. 11½, 16-oz., each 1	04
Garden City, No. 111½, 16-oz., each	87
Tinner's Riveting, No. 1, 8-oz., each	82
Shoe, Steel, No. 1, 13-oz., each	65
Tack.	
Magnetic.	
No. 5, 4-oz., each.....	72

HAMMERS, HEAVY.

Farrier's 20%
Mason's.
Single and Double Face....50%

HANDLES.

Agricultural Tool.
4½-inch, plain...per doz. $3 50
Auger.
Common Assorted, per doz. $0 75
Pratt's Adjustable, Nos. 1 & 2, per doz..... 6 00
Ives' Adjustable, per set.. 1 35
Axe.
Hickory, No. 1....per doz. 3 00
Hickory, No. 2.... " 2 00
1st quality, second growth 6 00
Special white, 2nd growth 4 50
Chisel.
Hickory, Tanged, Firmer Assorted .....per doz. 55c
Hickory, Socket Firmer, Assorted .....per doz. 70c
Coal Pick 40%
Drifting Pick 40%
File, ...per doz. $1 20
Hammer and Hatchet.
No. 1 per doz.....$0 90
Second growth hickory, per doz. 1 40
Hay and Manure Fork, Handles, Strap and Ferrule ..... per doz. $7 00
Screw Driver.
Assorted .....each 6c
Shovel and Spade.....Net
Soldering.
Per doz. $2 40

HANGERS.

Conductor Pipe.
Milcor Perfection Wire.....25%
Eaves Trough.
Steel hangers 30%
Triple Twist wire.....10%
Milcor Eclipse Wire.....15%
Milcor Triplex Wire.....10%
Milcor Milwaukee Extension..10%
Milcor Steel (galv. after forming) List plus 12½%
Milcor Selflock E. T. Wire, List plus 40%

HASPS.

Hinge, Wrought, with staples.Net

HATCHETS.

V. and B. Supersteel.	Each
Broad, No. 1, 24-oz.....$1	43
Broad, No. 3, 32-oz..... 1	78
Half, No. 1, 15-oz..... 1	25
Half, No. 3, 27-oz..... 1	37
Claw, No. 1, 19-oz..... 1	31
Claw, No. 2, 25-oz..... 1	37
Flooring, No. 1, 20-oz..... 1	43
Flooring, No. 2, 24-oz..... 1	60
Shingling, No. 1, 17-oz..... 1	20
Shingling, No. 2, 23-oz..... 1	25
Lathing, No. 1, 14-oz..... 1	20
Lathing, No. 2, 17-oz..... 1	25
Vanadium Steel.	
Half, No. 62, 22-oz.....$1	82
Underhill Pattern Lathing, 9 row, 19-oz..... 2	29

HINGES.

Heavy Strap, in Bundles.

4 inch, doz. prs.....$0	93
5 " " " 1	12
6 " " " 1	54
8 " " " 2	55

Extra Heavy T in Bundles.

4-inch, doz. prs.....$1	41
5 " " " 1	50
6 " " " 1	85
8 " " " 3	20

HOES.

Garden .....Net

HOOKS.

Box.
V. and B. No. 9, each....$0 26
Conductor.
Conductor hooks 20-10%
Milcor .....
"Direct Drive" Wrought Iron for wood or brick..15%
Cotton.
V. and B. No. 8, each.... 24
Hay.
V. and B. No. 1, each.... 26
Bar Meat.
V. and B. No. 26, ⅝", each 09
V. and B. No. 28, ½", each 16
Screw Meat.
V. and B. No. 2, per gro.. 6 50
Butchers' "S."
V. and B. No. 6, each..... 08
V. and B. No. 8. each..... 11

HOSE.

	Per Ft.
⅝-in. 2 ply molded..9½c to 12¾c	
⅝-in. cord .....8½c to 10c	
¾-in. wrapped .....9½c to 13½c	

IRONS.

Sad.	
Charcoal .....per doz.	11 00
Common, polished, per 100 lbs.	7 75
No. 70 Asbestos.....$1	50 net
No. 100 " 1	75 net
Common, nickel plated Mrs. Potts.'	3 25
No. 50 J. Enterprise, per set	Nets
No. 55 J, " "	"
No. 50 T, " "	"
No. 55 T, " "	"
E. C. Stearns.'	
No. OA Corner, doz. sets.	$2 50
No. OB " "	2 75

JACKS.

Wagon.		
Richard's No. 1.per doz.	$15	50
Oliver,		
Each $0	60	$0 80
Nos.	0	00
Standard,		
Each $0	60	$1 00
Nos.	1	2
Big Lift 40%		
Tiger 40%		

KNIVES.

Beet Topping.
Clyde, 9-in. Scimitar Blade, doz. 25%
California 25%
Butcher.
Beechwood Handles, 6-inch blade 25%
Beechwood Handles, 7-inch blade 25%
Beechwood Handles, 3-inch blade 25%
Cooper's Hoop 25%
Drawing.
Standard 25%
Adjustable 25%
Barton's Carpenters' 25%
Hay.
Iwan's Solid Socket.....25%
Heath's 25%
Iwan's Sickle Edge.....25%
Iwan's Imp'd Serrated....25%
Hedge.
Challenge 25%
Disston's No. 1.....25%
Putty.
Common 25%
Lander's 25%
Scraping.
Beech Handle 25%
Lander's 25%

KNOBS.

Door.	
Mineral .....per doz.	$2 00
Porcelain ..... "	2 00
Jet ..... "	2 00

LADDERS.

Step.
Common, per ft.....28c
Common, with Shelf, add 10c
IXL 34c
Challenge, 6 to 9 ft.....55c
10 to 16 ft.....60c

LANTERNS.

	Per doz.
Monarch tin, hot blast.....$	8 25
Dietz No. 2, cold blast.....	13 00
Best tubular	8 25
Competition lanterns No. 0 tubular	6 90

LEATHER BELTING.

From No. 1 Oak Tanned Butts.
Extra heavy, 18-oz.....35%
Heavy, 16-oz.....40%
Medium, 14½-oz.....40%
Light, 13-oz.....50%

LEATHER LACING.

Cut, strictly No. 1.....45%

LEVELS.

Disston, No. 28 Asst.....$	22	05
" No. 18, 20 in., each	1	83
" No. 22, 24 in., each	2	40
" Shafting, 6 in.....	19	80
" " 6 in. gr. glass	24	20
" No. 1 Asst.....	5	75
" No. 2 Asst.....	12	40
" 24-26 in., each....	1	02
" 28-30 in., each....	1	00

LIFTERS.

Stove Cover.
Coppered .....per gro. $6 00
Alaska ..... " 4 75
Transom.
Payson's 55%

LOCKS.

Barn Door.
No. 60 Stearns..per doz. $11 00
No. 80 " " 20 00

MALLETS.

Carpenters'.		
Fibre Head, No. 2, per doz.	$12	00
" No. 3, "	15	50
" No. 3½ "	20	50
Round Hickory .....per doz	$3 00—	5 00
Tinners'.		
Hickory .....per doz.	$2	25

MATS.

Door.
National Rigid ....5 & 10 & 5%
Acme Steel Flexible.....50%

MEASURES.

Galvanized, doz.....Nets
Japanned, doz. .....Nets

MITRES.

Galvanized steel mitres, and caps, end pieces, outlets...30%
Milcor .....
Galv. one piece stamped....40%

MOPS.

Cotton, Star (Cut Ends).

Pounds	12'	15'	18'	24'-3-oz.
Per doz.	$4 00	4 35	5 50	7 00

Enterprise 16⅔%
Parker .....50 & 5%

NAILS.

Cut Steel $4 60
Cut Iron 4 60
Wire.
Common 3 45
Cement Coated.
Small Lots 2 30
Horseshoe.
Ausable .....55 & 5%
Capewell 15%
Perfect .....55 & 5%
Putnam .....20 & 5%
Star .....30 & 5%
Picture.
Brass Heads 25%
Brads 70%
Furniture.....List plus 15%

NETTING, POULTRY.

Galvanized before weaving...50%
Galvanized after weaving...40%

NIPPERS.

Nail Cutting.
V. & B. No. 30.....78c
Double Duty.
V. & B. No. 60.....76c
Hoof.
Heller's .....40 & 10%
V. & B., No. 52, each.....$2 25

NOZZLES.

Hose.
Magic .....per doz. $9 50
Diamond ..... " 5 75

OILERS.

Chase Pattern.
Brass and Copper.....10%
Zinc Plated .....40 & 10%
Railroad.
Brass .....20&5%
Coppered .....50 & 50%
Steel.
Copper Plated.....70 & 5%

OPENERS.

Can.
Delmonico .....per doz. $1 30
Never Slip ..... " 65
Crate.
V. & B.....per doz. $7 25-11 00

PAILS.

Cream.
14-qt. without gauge, ...per doz. $9 50
18-qt. without gauge, ...per doz. 11 00
20-qt, without gauge, ...per doz. 11 75
Sap.
10-qt., IC Tin....per doz. $4 00
12 " " " " 5 50
Stock.

Galv. qts.	14	16	18	20
Per doz.	$9 75	10 75	12 75	14 50

Water.

Galvanized qts.	10	12	14
Per doz.	$5 75	6 50	7 25

Wood.
Cable, 2-Hoop....per doz. Nets
Cable, 3-Hoops... " Nets
Cable, 3-Hoops, brass " Nets

PANS.

Dripping .....Net
Fry.
Common .....Nets
Acme ..... "
Roasting.
Paxton,

Nos.	1	2	3	4
Per doz.				Nets

PAPER.

Roofing.	Per Square
Best grade, state surf. prepd.	$1 85
Best talc surfaced.....	2 25
Medium talc surfaced.....	1 60
Light talc surfaced.....	0 90
Red Rosin Sheathing, per ton	65 00

PICKS.

Contractors' 40%
Railroad .....50 & 5%

PINCERS.

All V. & B.
Carpenters', cast steel,

No.	6	8	10	12
Each	$0 43	$0 52	$0 61	$0 71

Blacksmiths', No. 10.....$0 64

PINS.

Clothes.
Common, per box of 5 gro. $0 95

PIPE.

Conductor.
Plain Round and Round Corrugated.
29 Gauge .....70&5%
28 " .....70&5%
26 " .....70&5%
24 " .....70&5%
"Interlock" Galvanized.
Crated and nested (all gauges) 60-20%
Crated and not nested (all gauges) 60-15%
Square Corrugated A and B and Octagon.
29 Gauge 65%
28 " 65%
26 " 65%
24 " 65%
"Interlock."
Crated and nested (all gauges) 60-20%
Prices for Galvanized Toncan Metal, Genuine O. H. Iron, Lyonmore Metal and Keystone C. B. on application.

Stove.	Per 100 joints
26 gauge, 5 inch E. C. nested	15 40
26 gauge, 6 inch E. C. nested	16 50
26 gauge, 7 inch E. C. nested	18 70
28 gauge, 5 inch E. C. nested	13 20
28 gauge, 6 inch E. C. nested	14 30
28 gauge, 7 inch E. C. nested	16 50
30 gauge, 5 inch E. C. nested	11 00
30 gauge, 6 inch E. C. nested	12 10
30 gauge, 7 inch E. C. nested	14 30

T-Joint Made up.
6-inch .....per 100 38 50
Furnace Pipe.
Double Wall Pipe and Fittings 40%
Single Wall Pipe, Round Pipe Fittings 40%
Galvanized and Back Iron Pipe, Shoes, etc.....40%
Milcor, galvanized.....Net

PLANES.

Stanley Iron Bench.....Net

PLIERS.

(V. & B.)

Nut,	No. 3, each		$2 60
"	No. 5, each		64
"	No. 25, each		69
Gas,	No. 7, each		55
"	No. 8, each		61
"	No. 12, each		87

Lining or Crimping.
No. 35, each..... 64
Button's Pattern.
No. 6 each..... 61
No. 8 each..... 74
Double Duty, No. 106..... 50

POINTS, GLAZIERS.

No. 1, 2 and 3...per doz. pkgs. 65c

POKERS, STOVE.

Wr't Steel, str't or bent, ... per doz. $0 75
Nickel Plated, coil hanl's " 1 10

PULLEYS.

Awning—Jap'd 10%
Clothes Line 10%
Hay Fork.
Iron Wheel, 5-in..per doz. $2 50
Wood Wheel, 6-in. " 2 65
Wood Wheel, 6-in. pass knot ..... " 3 00
Sash.
Common .....Net
Common-Sense, 2-in .....Net
Empire Pattern, 2-in.....Net
Ideal .....Net
Steel .....Net

PUMPS.

Spray.
Midget Junior....per doz. $3 75
New Misty ..... " 6 00
Crescent ..... " 6 50

PUNCHES.

Machine.	Each
V. & B., No. 11-13, ⅛x6	$ 19
V. & B., No. 90, ⅝x9	27
V. & B., No. 10. ¾x10	29
V. & B., No. 1-6, ½x6	12

Center.
V. & B., No. 50, ⅜x4..... 14
Belt.
V. & B., No. 101-103..... 24
V. & B., No. 108-109..... 33
V. & B., No. 25, ass't.....3 80
Parker Metal Punch No. OX .....each $7 00
Parker Extra Punch. 30
Parker Extra Die..... 40
Whitney's Ball Bearing.. .....Prices on application

PARERS.

Apple.
Goodell's .....per doz. $10 80
Turntable ..... " 11 40
White Mountain " 8 40
Reading No. 78 " 11 40

PUTTY.

Commercial Putty, 100-lb. kits $3 60

RAKES.

Garden.	Per doz.
Steel, Bow, 12-inch Teeth	$8 50
Steel, Bow, 14-inch "	9 25
Malleable Iron, 12-in. "	4 75
Malleable Iron, 14 in. "	5 00

Hay.
Wood, 10 Teeth.....$4 00
Lawn.
30 Teeth .....per doz. 5 50

RAZORS—SAFETY.

Gillette .....per doz. $45 00
Auto Strop ..... " 45 00
Gem ..... " 8 40
Gem (3 doz. lots).. " 8 00
Ever Ready ..... " 8 40
Ever Ready (3 dz. lots)" 8 00

RAZORS STRAIGHT.

RAZOR STROPS.

Star (Honing) 50%

FLOOR REGISTERS AND BORDERS.

Cast Iron 15%
Steel and Semi-Steel.....30%
Baseboard 30%
Adjustable Ceiling Ventilators 30%
Register Faces—Cast and Steel
Japanned, Bronzed and Plated, 4x6 to 14x14.....30%
Large Register Faces—Cast, 14x14 to 38x42.....50%
Large Register Faces—Steel, 14x14 to 38x42.....60%

REGULATORS.

(Parker Dial Damper with Bearings.)
Each .....$ 50
Per doz. 5 50

RIDGE ROLL.

Galvanized.
Crated 70-25%
Wired 70-25-5%
Milcor .....
Plain, crated 75%
Plain, bundled 75-2½%

RIVETS.

Copper Belt .....50% Discount
Coppered Iron 50%
Tinners' 50%
Hame..... per lb. $0 17
Slotted Clinch per doz. 60 @ 1 10
Tubular.
Nos. 1 and 2 assorted sizes, 50 in box.....doz. 75c
Nos. 1 and 2 assorted sizes, 10 in box.....doz. 1 40

ROPE.

Cotton.
¼, 5-16 in. and larger, per lb. .....50c to 60c
Sisal.
1st Quality, base 12½c to 15½c
No. 2.....11c to 14½c
Manila.
1st Quality standard brands .....16½c to 18½c
No. 2 .....15½c to 16½c
Hardware Grade, per lb. 15½c

SAWS.

Butchers'.

Atkins	No. 2, 14-in	$12 75
"	No. 2, 18-in	14 30
"	No. 7, 16-in	15 85
"	No. 2, 22-in	15 92
"	No. 7, 20-in	18 05
"	No. 7, 24-in	20 20
"	No. 7, 28-in	22 35

Compass.

Atkins	No. 2, 10-in	$ 5 45
"	No. 10, 10-in	5 60
"	Blades, No. 2, 10-in.	3 25
"	" No. 2, 10-in.	3 30

Cross-Cut.

Atkins	No. 221, 4-ft	3 03
"	No. 221, 6-ft	4 45
"	No. 221, 8-ft	6 07

Flooring, Hand.

Atkins	No. 96, 16-in	20 45
"	No. 96, 20-in	21 70

Hand and Rip.

Atkins	No. 54, 20-in	19 50
"	No. 54, 26-in	24 40
"	No. 53, 16-in	18 10
"	No. 53, 20-in	22 90
"	No. 53, 24-in	26 60
"	No. 53, 28-in	31 45
"	No. 53, 30-in	34 15

Keyhole.

Atkins	No. 1, complete	3 10
"	No. 2, complete	3 70

Miter Box.

Atkins	No. 1, 4x20	32 65
"	No. 1, 5x22	38 00
"	No. 1, 6x22	42 20

Pruning.

Atkins	No. 20, 12-in	8 45
"	No. 10, 16-in	18 15

Wood.

Atkins	No. 202	7 19
"	No. 318	8 75
"	No. 906	15 50
"	No. 1509	16 56

SCOOPS.

Hubbard Western Pattern Riveted.

Size	A	B	C	D
1..	$16 75	16 00	15 25	14 45
4..	17 85	17 10	16 35	15 60
6..	18 65	17 85	17 10	16 35

SCRAPERS.

Box.
No. 6, six blades, each.... 25c
Hog.
No. 6, each..... 25c
Floor (Stearns).
No. 10, each.....$11 50

SCREEN DOOR HINGES.

Cast iron .....gross $13 00
Steel ..... " 9 50

SCREWS.

Jack.....Standard List 45%
Lag or Coach—all sizes, gimlet pointed 40-10%
Wood.
F. H. Bright.....82-5%
R. H. Blued.....75-20-5%
F. H. Jap'd.....70-20-5%
F. H. Brass.....78-5%
R. H. Brass.....70-20-5%
Sheet Metal.
No. 7, ½x½, per gross...$ 55
No. 10, ¾x3/16, per gross.. 75
No. 14, ⅞x¼, per gross... 90

SCREW DRIVERS.

Uncle Sam Standard Head.

3 inches, each	$ 45
5 inches, each	52
8 inches, each	68
12 inches, each	1 02

Uncle Sam Insulated Head

3 inches, each	$ 49
5 inches, each	57
8 inches, each	76
12 inches, each	1 14

SETS.

Nail.
V. & B.
No. 100, in cardboard boxes .....doz. $1 55
No. 100, in wooden boxes, ... doz. 1 58
No. 30, assorted,....doz. 39
No. 5, in cardboard boxes, ... doz. 1 25
No. 5, in wooden boxes, ... doz. 1 30
Rivet.
V. & B.
Farmers' $0 19
Tinners' 3-4 ..... 0 40
" 00-0 ..... 0 60
Saw.
Atkins No. 10....per doz. $3 80
" No. 12.... " 6 20

SHEARS.

	Per Doz.
Nickel Plated, Straight, 6″	$12 90
" " " 7″	14 85
" " " 8″	16 80
Japanned, Straight ....6″	11 00
" " ....7″	12 40
" " ....8″	13 80

SHEAVES, SLIDING DOOR.

Common.

Inches	3	4	5
Per set	$1 40	1 75	2 40

Hatfield's.

Per set $1 80 2 10 2 75 25

SHINGLES.

Per Square

Zinc (Illinois) $15 00

SHOES.

Milcor.

Galv. Std. gauge, Plain or corg. round flat crimp...65@
26 gauge round flat crimp..45%
24 gauge round flat crimp..15@

Square Corrugated.

Standard gauge 50%
26 gauge 35%

Conductor .....60@

SHOVELS AND SPADES.

Coal.

Hubbard's.

No.	A	B	C	D
1	$16 00	15 10	14 45	13 70
2	16 35	15 60	14 85	14 10
3	16 75	16 00	16 25	14 45
4	17 10	16 35	16 60	14 85

Post Drains & Ditching.

Hubbard's.

Size	A	B	C
14″	17 15	16 40	15 65
16″	17 50	16 75	16 00
18″	17 85	17 10	16 85
20″	18 20	17 45	16 70
22″	18 55	17 80	17 05

Alaska Steel.

D-Handle .....per doz. $3 50
Long Handle ..... " 3 00

SKATES.

Roller.

Ball Bearing—Boys' $1 50
Ball Bearing—Girls' 1 60

Ice.

Key Clamp Rocker, Men's and Boys' 0 70
Key Clamp Rocker, Men's and Boys' 1 03
Half Key Clamp Hockey, Women's and Girls'.... 0 96

SNAPS, HARNESS.

Covered Spring .....Add 30%
Judd's Pattern Add $3 1-6% to list

SNATHS.

Double Ring Bush..per doz. $9 75
Patent Loop, Bush.. " 10 00
Patent Loop, Grass. " 8 75

SNIPS, TINNERS'.

Clover Leaf .....40&10%
National .....40&10%
Star 50%
Milcor .....Net

SPRINGS, DOOR.

Perfect.

Nos.	2	3	4	5	6	7
Per doz.	45c	50c	55c	65c	80c	90c

Reliance.

	Light	Medium	Heavy
Per doz.	$1 80	2 40	3 75

Torrey's .....per doz. 1 65

SQUARES.

Steel and Iron.....Net
(Add for bluing, $3.00 per doz. net)
Mitre ..... "
Try ..... "
Try and Bevel..... "
Try and Miter..... "
Fox's .....per doz. $6 00
Winterbottom's 10%

STAPLES.

Blind.

Barbed .....per lb. 21@22c

Butter, Tub..... " 16@19c

Fence—

Polished .....per 100 lbs. $5 45
Galvanized ... " 6 15

Netting.

Galvanized ...per 100 lbs. 6 54

Wrought.

Wrought Staples, Hasps and Staples, Hasps, Hooks and Staples, and Hooks and Staples .....50&10%
Extra heavy 35%

STONES.

Axe.

Hindostan	....per lb.	New Nets
More Grit	.... "	"
Washita	..... "	"

Emery.

No. 126.....per doz. New Nets

Oil—Mounted.

Arkansas Hard No. 7	.....per doz.	New Nets
Arkansas Soft	"	"
Washita No. 717	"	"

Oil—Unmounted.

Arkansas Hard	per lb.	New Nets
Arkansas Soft	"	"
Lily White...	"	"
Queer Creek..	"	"
Washita	"	"

Scythe.

Black Diamond	per gro.	New Nets
Crescent	"	"
Green Mountain	"	"
LaMolle	"	"
Extra Quinnebog	"	"
Red End	"	"

STOPS, BENCH.

No. 10 Morrill pattern .....per doz. $11 00
No. 11 Stearns pattern ..... " 10 00
No. 15 Smith pattern " 7 00

STOPPERS, FLUE.

Common .....per doz. $1 10
Gem, flat, No. 3... " 1 00
Gem, No. 1..... " 1 10

STRETCHERS.

Carpet.

Bullard's .....per doz. $3 90
Excelsior ..... " 5 25
Malleable Iron ... " 70
Perfection ..... " 6 30
King ..... " 4 50

Wire.

O. S. Elwood, No. 1 per doz. Nets
O. S. Elwood, No. 2 " "

SWIVELS.

Malleable Iron .....per lb. $0 10
Wrought Steel .....per gro. 4 50

TACKS.

Bill Posters' 6-oz. 25-lb. boxes per lb. 15c
Upholsterers' 6-oz., 25-lb. boxes, per lb.....15¼c

TAPES, MEASURING.

Asses' Skin .....List&40%

THERMOMETERS.

Tin Case .....per doz. 80c&$ 1 25
Wood Back... " $2 00& 12 00
Glass ..... " 12 00

TIES.

Bale.

Single Loop, carload lots .....75&7%
Single Loop, less than car lots .....70&15%

TRAPS.

Mouse and Rat. Per gross

Sure Catch Mouse Traps..$	2 10
Vim Mouse Traps.....	2 10
Short Stop Mouse Traps.	1 80
Wood Choker Mouse Traps, 4 hole.....	10 25

Per doz.

Sure Catch Rat Traps....$0	90
Dead Easy Rat Traps....	80

Packed in One Bushel Band Stave Baskets.
List per bushel

Sure Catch Mouse Traps (360 Traps) .....$	5 25
Short Stop Mouse Traps (360 Traps)	4 50
Sure Catch Rat Traps (54 Traps)	3 60
Short Stop Rat Traps (54 Traps)	3 15

Assorted Mouse and Rat Traps.
List per bushel

Sure Catch (216 Mouse Traps and 26 Rat Traps)$	4 90
Short Stop (216 Mouse Traps and 26 Rat Traps)	4 25

TROWELS.

Cement.

Atkins No. 6..... 19 50
" No. 9..... 25 50

TWINE.

White Cotton.

Eureka, 4-ply .....per lb. 30c

Jute.

3-ply and 6-ply Bale Lots 22½c

ADVERTISERS' INDEX

The dash (—) indicates that the advertisement does not appear in this issue.

VALLEY.

Formed Valley Galvanized Steel 60-5%
Milcor .....
Galv. formed or roll.....60%

VISES.

No. 700, Hand, Inches	4½	5	5½
Doz.	$11 15	13 00	14 85
No. 701. In.	4	5	6
Doz.	$11 15	13 00	16 70

No. 1, Genuine Wentworth, Noiseless Saw....per doz. 9 25
No. 3, Genuine Wentworth, Noiseless Saw....per doz. 12 75
No. 500, All Steel Folding Saw .....per doz. 16 00

WASHERS.

Cast.

Over ½ in. barrel lots, per 100 lbs.....$6 25

Iron and Steel.

In.	5/16	⅜	½	⅝	¾
	10¼c	9¼c	7⅝c	7½c	7 2/5c

WEATHER STRIPS.

Metallic Stitched.

½ in., per 100 ft.....$1 80
¾ in., per 100 ft..... 2 20

Wood & Felt.

⅝ in., per 100 ft..... 1 56
⅞ in., per 100 ft..... 1 56

WEDGES.

Ax.	per doz. Nets
Galling .....per lb.	Nets
Saw .....per lb.	8½c

WEIGHTS.

Hitching .....per lb. Nets
Sash—f. o. b. Chicago
Smaller lots, per ton.... 50 00

WHEEL BARROWS.

Common Wood Tray.....$3 00
Steel Tray 4 50
Angle leg, garden..... 5 75

WHEELS.

Carborundum 50%
Emery 60%
Well, Ins..... 8 10 12
Per doz.....$5 50 7 25 8 50
12-in. heavy hoisting, per doz. $25 00

WIRE.

Plain annealed wire, No. 8 per 100 lbs.....$3 20
Galvanized barb wire, per 100 lbs. 4 10
Wire cloth — black painted, 12-mesh, per 100 sq. ft.... 1 90
Cattle Wire—galvanized catch weight spool, per 100 lbs. 4 10
Galvanized Hog wire, 80 rod spool, per spool..... 3 85
Galvanized plain wire, No. 3, per 100 lbs..... 3 70

WOOD FACES.

50% off list.

WRENCHES.

Coes Steel Handle,	6-in.		60%
" " "	8-in.		60%
" " "	10-in.		60%
" " "	12-in.		60%
Coes Knife-Handle,	6-in.		60%
" " "	8-in.		60%
" " "	10-in.		60%
" " "	12-in.		60%

Coes All Patterns.....60%

Knife Handle Pattern.

No. 63, Screw Wrench, List plus 30%
No. 60, Steel Handle.....30%

WRINGERS.

No. 790, Guarantee,	per doz.	$49.50
No. 770, Bicycle ...	"	47 00
No. 670, Domestic .	"	43 50
No. 110, Brighton ..	"	39 00
No. 750, Guarantee.	"	51 00
No. 740, Bicycle ...	"	48 50
No. 22, Pioneer ...	"	35 50
No. 2, Superb ...	"	25 50